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ABSTRACT

A study examined the potential for development of a traffic accident-reporting form in the Canadian daily press that strengthens concern for road safety in the general population and enhances knowledge, attitudes, and behavior leading to greater safety. The investigation was conducted on three levels: a content analysis, a readership analysis, and a field experiment of a modified accident-reporting style. First, 12 daily newspapers in Ontario and Quebec were investigated on the manner in which they reported on traffic accidents. Very small percentages of accidents that actually occurred with little information on causes were found to be reported. Secondly, telephone interviews with 392 holders of valid driver's licenses in Kingston, Ontario, yielded data on motivations and reactions to the reading of traffic accident reports in the daily paper. Thirdly, a prototype of a more educational accident journalism was developed and implemented by the daily newspaper in Kingston; Belleville served as control. After 8 weeks structured telephone interviews with approximately 1200 licensed drivers showed significant changes in people's opinions of accident reporting, in their perceptions of the magnitude of the accident problem and traffic accident risks, and in the attribution of accident causes. (YLB)

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ACCIDENT JOURNALISM AND TRAFFIC SAFETY EDUCATION

A three-phase investigation of accident reporting in the Canadian daily press

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Abstract

Traffic accident reporting in the Canadian daily press was investigated on three levels: a content analysis, a readership analysis and a field experiment of a modified accident reporting style.

First, twelve daily newspapers in Ontario and Quebec were investigated on the manner in which they reported on traffic accidents in a three-month period. The accident reports were analyzed in terms of 51 content variables and compared with accident data obtained from police departments and provincial ministries of transport. Very small percentages of actually occurring accidents were found to be reported by newspapers, which also contained little information on the causes of these accidents. Implications for public education with repsect to traffic accident prevention are discussed.

Secondly, semi-structured telephone interviews were held with 392 holders of valid driver's licenses in Kingston, Ontario. The interview focussed upon motivations and reactions with regard to the reading of traffic accident reports in the daily paper. The data were analyzed with a view to providing information of potential use in the development of an accident reporting style which would better inform an educate the road-using public with respect to the size of the accident problems, causation of accidents and their preventability.

Thirdly, an effort was made to develop a prototype of a more educational accident journalism. The modified style was implemented by the daily newspaper in Kingston, Ontario, while another communinity, Belleville, Ontario, served as control. Social surveys conducted before and after the eight week implementation of the modified style took the form of structured telephone interviews with a total of approximately 1200 licenced drivers. Significant changes were observed in people's opinions of accident reporting, in their perceptions of the magnitude of the accident problem and traffic accident risk, and in the attribution of accident causes.

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GENERAL BACKGROUND, PURPOSE AND SCOPE

There are several ways in which the Canadian public is informed through the mass media on issues regarding traffic accidents and safety.

Presently the two most prominent forms are the road safety messages emitted by governments, safety councils and similar organizations, and "everyday" accident reporting in newspapers, on radio, or on television. The former type of communication consists of messages whose content is carefully chosen in order to produce maximum information, attitude and behaviour change in the audience (Wilde, L'Hoste, Sheppard and Wind, 1971; Wilde, 1977). These mass publicity campaigns for traffic safety do not originate from the program or editorial staffs of such communication media as radio, television or newspapers. Extraneous agencies request or purchase time and space in the media and determine message content and message time. However, factors which restrict the usefulness of these deliberate messages are that they are low in frequency, extend over relatively short exposure periods and have to compete with many other messages, commonly of a commercial nature, for public attention.

In contrast, reports of individual accidents are communicated virtually every day, or at least several times a week, with the media themselves (radio, television and newspapers) taking responsibility for the report's content and timing. Two previous reports indicated that accident reports enjoy considerable interest among newspaper readers. A Japanese investigation of readership response to a particular issue of a Tokyo newspaper revealed that more people had read an accident report as opposed to articles regarding a tax cut, the Vietnam situation, a murder case, and information on child care (Hayakawa, 1965). Also, a Norwegian study observed that among newspaper readers in Oslo, traffic accidents were about as popular reading as the cartoon series and as the radio and television programme listings printed in the Newspapers (Berg, 1973).

Deliberate road safety messages are often designed on the basis of what is known about effective persuasive techniques that bring about desirable changes in road user knowledge, attitudes or behaviour (Wilde, L'Hoste, Sheppard and Wind, 1971; Wilde, 1974; Wilde, Cake and LaBrasseur, 1974; Wilde, 1974 (a and b), 1975, 1976). However, current newspaper, radio and television reports of accidents would seem to contain little material of educational value. This lack of use of the potential of accident reporting to inform the reading public on the nature of accident causes and the number of actually occurring road accidents is regrettable in light of recent research evidence on the concern for road safety in the general public (Wilde, O'Neill and Cannon, 1975; Wilde, 1977). It was found that an individual's degree of concern for road safety and his tendency to drive carefully are significantly greater if the driver:

(a) perceives the general potential for the ocurrence of road accidents as high, and

(b) views the causation of accidents as due to human action, and not to such factors as pure chance, bad luck, fate, or unpredictable equipment malfunctioning.

The purpose of this three-phase study was to examine the potential within traffic accident reporting in the daily press for developing a form that strengthens this concern for road safety in the general population and enhances knowledge, attitudes and behaviour which leads to greater safety on the roads.

Part One: Current traffic accident reports in the newspaper seem to provide little material of educational value. Causes of accidents are not generally mentioned. The same holds true for information that might have a bearing upon the severity of the accident, such as moving speed or seatbelt use. Furthermore, it would seem that only a small proportion of accidents recorded by the police are reported in the press. The goal of Part I was to provide factual information about this situation and to formulate suggestions for possible improvements in the educational role of the media.

An evaluation of the reporting styles in the Canadian daily press was made by means of a content analysis of selected newspapers (Gerbner, Holsti, Krippendorff, Paisley and Stone, 1969; Holsti, 1969). Comparisons were made with the relevant police force records, determining the proportion of accidents mentioned by the newspapers and the pertinent articles in the press were analyzed with regard to frequently and infrequently occurring content categories. Thus, from Part I a detailed, quantitative picture of the current reporting style emerged.

Part Two: In a readership analysis, newspaper subscribers were interviewed in order to determine what accident reports were read by what kind of individuals, for what reasons they were read, and what is being remembered of the content. Special attention was given to the question of whether readers formed any opinions or assumptions with regard to the causal or contributory factors in the occurrence of the accidents they read about. This study identified the elements of the current accident reporting style which would have to be retained or strengthened in potential modifications of the reporting style to maintain readership interest. (It may be noted that informative content *per se* as enhancing reader interest has also been shown in earlier studies which concluded that "people expose themselves to and absorb information which is useful." (Robinson, 1972))

Part Three: In Part III the desirable requirements of an accident reporting style that would enhance an educational impact were identified making use of the findings of Part II's readership analysis and mass communications theory. A prototype of this reporting style, written in such a manner as to inform and educate the reader and yet still constitute attractive reading material, was implemented for an eight-week period within one city, with another city serving as a control. The design of the investigation was in the form of before/after comparisons of interview responses in the experimental and control communities. The effect of the modified reporting style in producing better understanding of the

traffic accident problem and the nature of accident causation was evaluated and recommendations for a more educational accident journalism were formulated.

. . . . . .

Detailed procedures and findings of Parts I, II and III have been reported separately (Wilde and Ackersviller, 1977 and 1978; Ackersviller and Wilde, 1979). The present report presents a condensed version of these three reports in one volume.

PART I

CONTENT ANALYSIS OF TWELVE NEWSPAPERS IN QUEBEC AND ONTARIO

I.1 INTRODUCTION

With a view to investigating the manner in which the Canadian public is being informed regarding traffic accidents in the daily press, three sources of data were utilized in this part of the study: a content analysis of accident reports published by twelve newspapers in Ontario and Quebec during a three-month period in 1974; government statistics; and information from the police forces in the communities where the newspapers were published.

Accidents involving fatalities, personal injuries and/or a minimum of $200 damage to vehicles or other property are "reportable" accidents and appear in police records. These records allowed a comparison of the total number of accidents occurring during a specified time period with the number of accidents reported in the daily press of the same community. A distinction was made between the "in-town" accidents which occurred in the municipal area covered by a particular police force and newspaper, and "out-of-town" accidents which occurred outside of this area. Reporting rates of "out-of-town" accidents could not be calculated because of the impossibility of determining a geographical area and, therefore, what total number of actually occurring accidents may be expected to be "covered" by a particular newspaper.

Police records also provided a guide for the selection of the content categories for analysis of in-town and out-of-town accident reports. Accordingly, the proportion of newspaper reports that mention a content variable (e.g. time, location, driver's name, etc.) may be determined by taking the total number of accidents mentioned by the newspapers as the denominator. In addition to these variables (see

Table I.1). The number of article lines, headline size, location in the newspaper and day of the week reported were added.

TABLE I.1

LISTING OF CONTENT VARIABLES

CATEGORY A: Physical Article Features

- A.1 Day of week article is reported in paper
- A.2 Number of pages in paper on day reported
- A.3 Article location ([1] front page, [2] section front, [3] inside)
- A.4 Headline size in mm of article
- A.5 Article size (number of lines)
- A.6 Number of pictures
- A.7 Picture size (cm^2)
- A.8 (1) Picture(s) with caption only or (2) article with picture(s)
- A.9 Subsequent report of an accident

CATEGORY B: Time, Location and Roadside Conditions

- B.1 Date of accident (mention/no mention)
- B.2 Time of accident (mention/no mention)
- B.3 Location of accident (mention/no mention)
- B.4 Road character (e.g. one-way, divided; mention/no mention)
- B.5 Road condition (e.g. under repair, wet pavement; mention/no mention)
- B.6 Distance of accident from reporting city in miles; (out-of-town only)

CATEGORY C: Personal Data

- C.1 Driver's name (mention/no mention)
- C.2 Driver's age (mention/no mention)
- C.3 Driver's address (mention/no mention)
- C.4 Victim's name (mention/no mention)
- C.5 Victim's age (mention/no mention)
- C.6 Victim's address (mention/no mention)
- C.7 Name of investigating officer (mention/no mention)

CATEGORY D: Vehicles, Vehicle and Property Damage

- D.1 Number of vehicles (mention/no mention)
- D.2 Number of vehicles involved (number)
- D.3 Vehicle make (mention/no mention)
- D.4 Vehicle year (mention/no mention)
- D.5 Nature of damage to car (mention/no mention)
- D.6 Monetary value of damage to car (mention/no mention)
- D.7 Amount of vehicle damage (dollars)
- D.8 Nature of damage to property (other than car; mention/no mention)
- D.9 Monetary damage to property (mention/no mention)
- D.10 Amount of property damages (dollars)

CATEGORY E: Type of Collision, Accident Sequence and Road User Involvement

- E.1 Type of collision (mention/no mention)
- E.2 Accident sequence (mention/no mention)
- E.3 Hit and run (mention/no mention)
- E.4 Cyclist(s) involved (mention/no mention)
- E.5 Pedestrian(s) involved (mention/no mention)

CATEGORY F: Accident Causes Mentioned or Implied

- F.1 Causes (mention/no mention)
- F.2 Driver's condition (e.g. impaired, fatigued; mention/no mention)
- F.3 Seat belts (mention/no mention)
- F.4 Police charges (scored if any reference to charges were made, including statements that charges were not laid)
- F.5 Charges laid (scored if charges were laid according to report)
- F.6 Tests given (tests for Blood Alcohol Concentration; mention/no mention)
- F.7 Charges laid for impaired driving (scored if such reported)

CATEGORY G: Human Consequences

- G.1 Emotional content ([1] none, [2] some, [3] a great deal)
- G.2 Driver's personal life (mention/no mention)
- G.3 Driver's goal of trip (mention/no mention)
- G.4 Injuries (any reference to injuries, also if there were none reported)
- G.5 Victim's type of injury (references to nature of injury; mention/no mention)
- G.6 Fatal (mention/no mention)
- G.7 Action taken with regard to victim(s) (e.g. taken to hospital, funeral home; mention/no mention)

I.2 SAMPLE

For economical reasons, it was decided to limit the study (conducted from Kingston in Ontario) to the provinces of Ontario and Quebec. Eight of the forty-four Ontario dailies and four of the fifteen in Quebec were selected for content analysis. As random sampling would have been unlikely to have produced a good geographical spread and made it improbable that both the Globe and Mail and Toronto Star would have been selected, the papers were "hand picked." The two Toronto papers had a summed circulation of nearly half the total Ontario readership of newspapers and would offer an opportunity to compare reporting of the same accident pool by two different papers. It may be noted from Tables I.2 and I.3 that the selected papers represented 48.4 per cent of the total Ontario circulation and 35.4 per cent of the total Quebec circulation. Although the content analysis was only for three months--September, October and November, 1974--it was felt that the period was one of little legislative activity (e.g. mandatory seat-belt wearing) which might have affected newspaper content and it would be long enough to establish characteristic reporting features. When the police were consulted in the communities whose newspapers were under investigation, it was ascertained that in the seven Ontario cities chosen, 11.2 per cent of all Ontario accidents in 1974 occurred within the study period, and in the four Quebec communities 11.3 per cent of Quebec accidents in 1974 occurred during the three-month period.

I.3 REPORTING RATES OF IN-TOWN ACCIDENTS IN ONTARIO AND QUEBEC NEWSPAPERS

For each community, the number of accidents mentioned in the newspaper was divided by the number of accidents that occurred in the three-month period in 1974. The resulting reporting rates varied from between a minimum of less than .1 per cent (Toronto Star and Globe and Mail) and a maximum of 66 per cent (Timmins) in Ontario, and from .1 per cent (La Presse) to 3.5 per cent (La Voix de l'Est) in Quebec. The

TABLE I.2

DAILY NEWSPAPERS PUBLISHED IN THE PROVINCE OF ONTARIO, 1974

Location	Name	Circulation*
BARRIE	EXAMINER †	10,000
BELLEVILLE	THE INTELLIGENCER †	18,000
Brampton	Daily Times	9,000
Brantford	Expositor	28,000
Brockville	Recorder and Times	12,000
Cambridge	Daily Reporter	14,000
Chatham	Daily News	15,000
Cornwall	Standard-Freeholder	15,000
Fort Franci	Daily Bulletin	not listed
Guelph	Mercury	18,000
Hamilton	Spectator	134,000
KENORA	MINER AND NEWS †	4,000
KINGSTON	WHIG-STANDARD †	33,000
Kirkland Lake	Northern Daily News	7,000
KITCHENER	KITCHENER-WATERLOO RECORD †	62,000
Lindsay	Post	4,000
London	Free Press	129,000
Niagara Falls	Review	20,000
North Bay	Nugget	22,000
Orillia	Packet and Times	8,000
Oshawa	The Oshawa Times	25,000
Ottawa	The Citizen	108,000
Ottawa	Le Droit	44,000
Ottawa	The Journal	82,000
Owen Sound	Sun-Times	17,000
Pembroke	Observer	7,000
Peterborough	Examiner	25,000
Port Hope	Guide	3,000
St. Catherines	Standard	38,000
St. Thomas	Times-Journal	11,000
Sarnia	Observer	19,000
Sault Ste. Marie	Star	23,000
Simcoe	Reformer	9,000
Sioux Lookout	Daily Bulletin	1,000
Stratford	The Beacon Herald	11,000
Sudbury	Star	34,000
Thunder Bay	Times-News/Chronicle-Journal	31,000
TIMMINS	PRESS †	12,000
Toronto	Corriere Canadese	29,000
TORONTO	THE GLOBE AND MAIL †	265,000
TORONTO	THE TORONTO STAR †	731,000
Toronto	The Toronto Sun	146,000
Welland	Welland-Port Colborne Tribune	19,000
Windsor	The Windsor Star	84,000
Woodstock	Woodstock-Ingersoll Sentinel Review	10,000
	Total Circulation	2,346,000
	Summed Circulation of Selected Newspapers	1,135,000

* rounded to the nearest thousand

† included in the sample of selected papers

comparatively high reporting rates were generally found to hold true for smaller circulation newspapers, although reporting rates cannot be accurately predicted from knowledge of circulation volume. Taking circulation volume into account, the reporting rate of occurring in-town accidents was 2.4 per cent in Ontario and 1.8 per cent in Quebec, with an average between the two of about 2 per cent.

TABLE I.3

DAILY NEWSPAPERS PUBLISHED IN THE PROVINCE OF QUEBEC, 1974

Location	Name	Circulation*
Chicoutimi	Le Quotidien	19,000
GRANBY	LA VOIX DE L'EST †	9,000
Montréal	Le Devoir	31,000
Montréal	The Gazette	131,000
Montréal	Le Jour	31,000
Montréal	Le Journal de Montréal	145,000
Montréal	Montréal-Matin	119,000
MONTREAL	LA PRESSE †	239,000
Montréal	The Montreal Star	215,000
Québec	Le Journal de Québec	33,000
QUÉBEC	LE SOLEIL †	127,000
Rouyn-Noranda	Le Journal du Nord-Ouest	not listed
Sherbrooke	Record	6,000
Sherbrooke	La Tribune	39,000
TROIS-RIVIÈRES	LE NOUVELLISTE †	47,000
	Total Circulation	1,191,000
	Summed Circulation of Selected Newspapers	422,000

* rounded to the nearest thousand

† included in the sample of selected papers

I.4 MONTH-TO-MONTH CONSISTENCY IN REPORTING RATES OF IN-TOWN ACCIDENTS

Month-to-month consistency in reporting rates of traffic accidents was examined not only in terms of absolute numbers (the number of reported accidents as opposed to number of actually occurring accidents) but also in terms of its rank position (as compared to the other newspapers, reporting rate being greater (or first) or smaller). The month-to-month consistency in reporting rates was higher (Kendall's coefficent of concordance, $W = .96$) than when absolute numbers were concerned ($W = .68$), indicating that newspapers respond to temporal fluctuations in the number of accidents (that is, the greater the number of accidents, the greater the number of reports). Reporting rates differ greatly from paper to paper and were strongly related to circulation volume.

I.5 REPORTING FREQUENCIES OF OUT-OF-TOWN ACCIDENTS

As there would be no way to establish the occurrence of out-of-town accidents in actual numbers, the frequency in terms of absolute numbers

TABLE I.4

PROPORTIONS OF IN-TOWN ACCIDENTS OCCURRING IN SEPTEMBER, OCTOBER AND NOVEMBER 1974, REPORTED IN ONTARIO AND QUEBEC NEWSPAPERS

	September	October	November
Ontario			
Kenora	4/16 = .25	6/15 = .40	6/16 = .375
Barrie	28/66 = .42	14/54 = .26	29/76 = .381
Timmins	47/63 = .75	52/76 = .68	44/78 = .56
Belleville	6/56 = .11	2/62 = .032	5/66 = .08
Kingston	6/111 = .05	20/139 = .14	15/146 = .10
Kitchener-Waterloo	12/352 = .03	11/384 = .029	10/381 = .03
Toronto (Globe & Mail)	5/4633 = .001	13/4635 = .0028	4/4984 = .0008
Toronto (Star)	12/4633 = .003	13/4635 = .0028	8/4984 = .002
Québec			
Granby	14/158 = .09	2/168 = .012	2/186 = .011
Trois-Rivières	4/308 = .013	4/311 = .013	2/365 = .0055
Québec	11/1109 = .0099	18/1170 = .015	5/1103 = .0045
Montréal	9/4367 = .002	2/4260 = .0005	2/4361 = .0005

was examined. There was a generally consistent decrement in reporting out-of-town accidents within this three-month period between newspapers (W = .88, significant at the .01 level), indicating a tendency of reporting not based on actual rates of out-of-town accidents. It was noted that there was an (insignificant) tendency of large-volume papers reporting more out-of-town accidents.

Comparisons were made between the numbers of in-town and out-of-town accident reports in each month in each newspaper. Marked differences

TABLE I.5

COMPARISON OF FREQUENCIES OF IN-TOWN AND OUT-OF-TOWN ACCIDENT REPORTS IN A THREE-MONTH PERIOD; NEWSPAPERS ORDERED BY CIRCULATION VOLUME

	In-Town	Out-of-Town	Ratio
Kenora	16	14	1.14
Granby	18	57	.32
Barrie	71	64	1.11
Timmins	143	89	1.61
Belleville	13	128	.10
Kingston	41	177	.23
Trois-Rivières	10	123	.08
Kitchener-Waterloo	33	267	.12
Québec	34	140	.24
Montreal	13	117	.11
Toronto (Globe & Mail)	22	46	.48
Toronto (Star)	33	165	.20
Unweighted Sums	447	1387	
Unweighted Averages	37.3	115.6	
Unweighted Average Ratio			.33

between newspapers are clearly in evidence. Although it could not be stated with an acceptable level of certainty that smaller newspapers show a higher ratio of in-town to out-of-town accident report frequencies, the out-of-town accidents were found to be significantly greater in papers with larger circulations. Newspapers tended to be stable over time in their ratio of in-town to out-of-town accident reports as shown by a month-to-month concordance coefficient, $W = .82$ ($p < .01$). The degree of consistency in out-of-town accident reporting was somewhat lower than the month-to-month consistency in the reporting rates of in-town accidents ($W = .96$), but somewhat higher than the consistency of in-town reporting frequencies ($W = .68$).

I.6 DAY OF WEEK OF ACCIDENT REPORTING

For selected newspapers (all Quebec and the three largest Ontario papers), the day of the week on which the accident reports appeared was noted. In Quebec as well as Ontario papers, no less than seventy per cent of all out-of-town accidents were reported on Monday. There was little systematic discrepancy in this respect with regard to in-town reports. Considering that accidents may be expected to be reported the following day after their occurrence, 40 per cent of accidents in Ontario happen on Saturdays and Sundays, while 70 per cent of all out-of-town accident reports appear in Monday editions. The corresponding percentages in Quebec are 30 and 72 respectively. Although newspapers characterized by smaller circulation volumes show much less of a "day-of-the-week reporting bias," all papers had a preference for out-of-town accident reporting on Monday.

I.7 COMPARISON OF CONTENT CATEGORIES BETWEEN IN-TOWN AND OUT-OF-TOWN ACCIDENT REPORTS

Similarities and dissimilarities in reporting characteristics of in-town and out-of-town accidents may be seen in Table I.6 (weighted average proportions were obtained by taking the circulation volumes of each of

TABLE I.6

WEIGHTED AVERAGE PROPORTIONS AND RANKS OF CONTENT CATEGORY OCCURRENCE IN REPORTS OF IN-TOWN AND OUT-OF-TOWN ACCIDENTS; ALL TWELVE NEWSPAPERS

Variable Code	Identification	In-Town		Out-of-Town	
		Rank	Weighted Average Proportion	Rank	Weighted Average Proportion
D_1	Number of vehicles	1	.95	1.5	.94
B_1	Date	2	.91	7	.59
B_3	Location	3	.88	10	.50
G_4	Injuries*	4	.85	1.5	.94
G_5	Victim's type of injury†	5	.66	3	.88
B_2	Time	6	.64	13.5	.34
G_6	Fatal	7.5	.63	4	.83
C_1	Driver's name	7.5	.63	5	.66
C_3	Driver's address	9	.61	6	.61
C_6	Victim's address*	10	.59	12	.47
C_5	Victim's age*	11	.57	11	.48
C_4	Victim's name*	12.5	.51	9	.51
C_2	Driver's age	12.5	.51	8	.57
E_2	Accident sequence	14	.50	15	.33
G_7	Victim's action taken*	15	.43	17.5	.18
E_1	Type of collision	16.5	.31	13.5	.34
F_1	Causes	16.5	.31	16	.21
E_5	Pedestrians involved	18	.23	17.5	.18
B_4	Road character	19	.21	20	.07
A_6	Picture	20.5	.17	26.5	.04
D_5	Nature of damage to car	20.5	.17	22	.06
G_2	Driver's personal life	22	.15	19	.12
F_4	Police charges	23.5	.13	22	.06
F_5	Charges laid	23.5	.13	24	.05
D_8	Nature of damage to property	25	.11	26.5	.04
D_6	Monetary damage to car	26.5	.08	22	.06
E_3	Hit and run	26.5	.08	33.5	.02
D_9	Monetary damage to property	29	.07	36.5	.01
C_7	Name of officer	29	.07	30	.03
E_4	Cyclists involved	29	.07	30	.03
G_3	Driver's goal of trip	31.5	.06	26.5	.04
D_3	Vehicle make	31.5	.06	26.5	.04
B_5	Road condition	35.5	.03	36.5	.01
D_4	Vehicle year	35.5	.03	33.5	.02
F_2	Driver's condition	35.5	.03	30	.03
F_3	Seat belts	35.5	.03	38	.001
F_6	Tests (BAC)	35.5	.03	33.5	.02
F_7	Charges laid for impaired driving	35.5	.03	33.5	.02

* including fatal injuries

† including all victims, excluding driver.

the twelve newspapers into account, and these proportions were ranked according to size). A strong positive correlation between the contents of in-town and out-of-town accidents was noted (*rho* = +.95, Spearman rank correlation coefficient). What was reported in reports of in-town accidents was also reported in out-of-town accidents. There were, however, some exceptions in variables B_3, B_2, A_6, E_3 and D_9 which showed lower ranks for in-town accidents, indicating that in-town accidents relatively more often include photographs and mention:

- the location of the accident
- the time at which it occurred
- hit-and-run accidents
- monetary damage to car.

Applications of the sign test (Siegel, 1956) indicated that there was significantly ($p < .01$) less detail in the out-of-town reports which was in line with the finding that the (weighted) average size of out-of-town reports was less when compared with in-town reports (see Table I.7).

Out-of-town reports, however, were more serious in terms of their damage to life and limb, reporting more often injuries (G_4), victims' type of injuries (G_5), and fatalities. The average amount of monetary damage to vehicles (D_7) was more often mentioned in out-of-town accidents, but the opposite was found to be true for quantitative damage to property other than vehicles.

I.8 INTRODUCTION TO REPORTING CHARACTERISTICS OF CONTENT VARIABLES

The total number of 51 variables listed in Table I.1 have been grouped together in seven categories, A through G, in a manner in which the variables are related to each other to a greater or lesser extent. Discussion of the findings follows.

TABLE I.7

ADDITIONAL COMPARISONS BETWEEN IN-TOWN AND OUT-OF-TOWN ACCIDENT REPORTS; ALL TWELVE NEWSPAPERS

G_1	Emotional Content	Weighted Average Proportion:	None	Some	Much
		in-town:	.61	.28	.11
		out-of-town:	.74	.13	.13
A_8	Pictures	Weighted Average Proportion:	Picture and Caption Only	Article and Picture	
		in-town:	.05	.09	
		out-of-town:	.02	.02	
A_4	Headline Size (mm)	Weighted Mean of Means:			
		in-town:	6.41		
		out-of-town:	7.37		
A_5	Article Size (number of lines)	Weighted Mean of Means:			
		in-town:	22.86		
		out-of-town:	12.36		
A_7	Picture Size (cm^2)	Unweighted Average:			
		in-town:	172.29		
		out-of-town:	182.20		
A_9	Number of Subsequent Reports	Weighted Mean Number:			
		in-town:	2.12		
		out-of-town:	4.24		
D_7	Amount of Vehicle Damage (Dollars)	Unweighted Mean of Means:			
		in-town:	$1,254.75		
		out-of-town:	$5,571.00		
D_{10}	Amount of Property Damage (Dollars)	Unweighted Mean of Means:			
		in-town:	$5,505.75		
		out-of-town:	$ 828.20		
D_2	Number of Vehicles Involved	Weighted Mean of Means:			
		in-town:	1.77		
		out-of-town:	1.64		

I.8.1 Category A: Physical Features of Newspaper Articles

Greater prominence, in terms of printing the report on either the front page, section front, or inside the paper, was given to in-town reports as compared to accidents that happened outside the community in which the newspaper was published (11 per cent of in-town and 6 per cent of out-of-town on front page; about one-fifth in-town and very few out-of-town on section front; and about two-thirds in-town and nearly all out-of-town inside). The out-of-town report headlines were (insignificantly) larger than in-town headlines. Article size was generally larger for in-town reports (22.86 lines, weighted mean of means) than out-of-town reports (12.36 lines), which was consistent

with the fact that in-town reports generally give more information.

Photographic coverage with a powerful attention-getting potential was relatively rare (absent entirely in five of the Ontario papers for in-town accidents and two for out-of-town accidents). The weighted average proportions of pictures to accident reports was .17 for in-town and .04 for out-of-town reports. Quebec was found to have higher weighted average proportions than Ontario (in-town Ontario .18 and Quebec .28, and out-of-town Ontario .03 and Quebec .09), which was significant in both cases when tested ($p < .02$, two-tailed, Mann-Whitney U Test, Siegel, 1956). In line with these findings, photographic coverage, compared in rank with the other variables, had a lower ranking: in-town 20.5 and out-of-town 26.5. The noticeable difference was that in-town reports with photograph (.05 compared to .02) and photograph with caption (.09 compared to .02) had a higher proportion of pictures than out-of-town reports. The unweighted average size of picture as measured in cm^2 was not found to be significantly different (172.3 in-town and 182.2 out-of-town).

Subsequent reports appeared so infrequently that frequencies of actual reports were considered instead of proportions. There was a weighted mean of 2.12 in-town and 4.24 out-of-town subsequent reports per paper over the three-month period of time. As subsequent reports often contain information about fatalities occurring to injured victims after the actual accident date and charges laid by police after initial investigations, this low frequency of subsequent reporting may give an erroneous conception of the actual consequences of an accident.

I.8.2 Category B: Time, Location and Roadside Conditions

Date of accident was consistently high in mention proportions, ranging between 1.00 (Kenora, Kitchener-Waterloo and Granby) and .85 (Kenora and La Presse, Montreal) for in-town accidents and for out-of-town accidents between 1.00 (Kenora) and .21 (Toronto Star). Although at

first the weighted average proportion of in-town, .91, and out-of-town, .59, would seem to indicate a much higher proportion of mention of date within the in-town reports than out-of-town reports, when the proportion, .21, for the Toronto Star was excluded there was seen to be no difference: .91 in-town and .91 out-of-town.

Time of accident had a variance between proportions from 1.0 (Granby) to .31 (Belleville) for in-town and from .98 (Barrie) to .29 (Kenora) for out-of-town (with the exception of the Toronto Star, being .04). The weighted average proportions were .64 in-town and .61 out-of-town (with the exclusion of the Toronto Star which would have caused the out-of-town proportion to be .34).

Location of the accident was a highly scoring variable with proportions varying in-town from 1.00 (Kingston, Toronto Globe and Mail, Granby and Quebec) to .63 (Kenora), and out-of-town from .99 (Belleville and Kingston) to .64 (Quebec), with the exclusion of the Toronto Star scoring .18. There is still a difference between in-town (.88) and out-of-town (.50) reporting when weighted average proportions are considered, even when the Toronto Star is excluded (.88 in-town; .76 out-of-town).

Date of accident may thus be seen as important to both in-town and out-of-town reports, whereas location and time are mentioned more in the in-town reports (Table I.6 reflects this, the Toronto Star being excluded from the out-of-town proportions).

Road character (e.g. one-lane road, ramp, traffic circle) is rarely mentioned in either in-town reports, proportions varying between .78 (Granby) and zero (Barrie, Timmins and Belleville), or out-of-town reports, variance between .38 (Trois Rivières) and zero (Timmins, Kitchener-Waterloo and La Presse, Montreal). There was no significant difference between the weighted average properties for in-town (.21) and out-of-town (.07).

Road conditions (e.g. the road being under construction, snow-covered, etc.) were given even less mention, proportions ranging in-town from .09 (Quebec) to zero (Barrie, Toronto, Globe and Mail, Trois Rivières and La Presse, Montreal) and out-of-town from .21 (Kenora) to zero (Barrie, Toronto Star and La Presse, Montreal). Weighted average proportions were .03 in-town and .01 out-of-town.

Road character being assumed information on the part of the reader is argued against by the lack of difference found between low and high circulation papers. The paper, being read throughout a wide geographical area, could not be expected to give the readers knowledge of the character of a particular street or road by a mere mention of street name or highway number. Further support for this agrument is that in-town reports have a somewhat higher weighted average proportion for reporting this variable than out-of-town reports. The low mention of road condition was perhaps more critical because of the educational potential of the reader understanding what may be contributory factors to the accident.

Higher circulation papers had a wider reporting area of out-of-town accidents (49.94 miles - 25th percentile, 106.70 - median, and 239.09 - 75th percentile).

In summary, date, time and location of accident are included in large proportions of accident reports. Road character and road condition, with a greater possibility of educational value, were low in mention.

I.C.3 Category C: Personal Data

Driver's name, age and address received relatively high rates of mention, both where in-town and out-of-town accidents are concerned. Weighted average proportions for in-town accident reports were .63 for driver's name, .51 for driver's age, and .61 for driver's address. The comparable proportions for out-of-town accident reports were respectively

.66, .57 and .61. As far as this personal information is concerned, the driver's name, age and address were mentioned at approximately the same rate regardless if the accident occurred in-town or out-of-town. This also held true for the personal data about victims. It may be noted that in both Quebec and Ontario the two largest newspapers least often published the name and address of drivers involved in in-town accidents. A similar pattern emerged with respect to the out-of-town accidents but was not as systematic.

Although not all reported accidents involved victims, comparisons of the mention of victim's name, age and address showed that they were published with roughly equal frequencies. The name of the police officer investigating the accident was never mentioned by one-half of the newspapers under study. Weighted average proportions across all newspapers were seven per cent for in-town and three per cent for out-of-town accident reports.

I.8.4 Category D: Vehicles Involved and Damage to Vehicles and Property

The number of vehicles involved in collisions was the most often mentioned of all content variables (see Table I.6), with 95 per cent of all in-town accident reports and 94 per cent of all out-of-town reports making explicit reference to it (the latter ties with the reporting of injuries in out-of-town accidents, variable G_4). Minor variations between newspapers ranged between 88 per cent (Le Soleil, Quebec) and 100 for in-town reports and also for out-of-town reports (88 per cent for La Presse, Montreal).

Vehicle make and vehicle manufacturing year were on the average rarely mentioned variables, although the different newspapers showed much greater variations. In-town variations for vehicle make ranged between 50 per cent (Trois Rivières) and zero in-town and 39 per cent (Kitchener-Waterloo) and zero out-of-town. There was found to be no significant

consistency in mentioning vehicle make in the in-town reports and the out-of-town reports (rank correlation coefficient being *rho* = +.46, which was not significant at the .05 level). The manufacturing year of the vehicle had a weighted average proportion of .06 for in-town reports and .03 for out-of-town reports.

At first glance it would seem that the amount of monetary damage to vehicles, in-town, was considerably less often mentioned than the nature of the damage to vehicles involved (weighted average proportions .08 versus .17). However, this was true only for five of the twelve newspapers, marked differences between papers being responsible for this. The mentioning of monetary damage varied between zero and 88 per cent, while mention of vehicle damage ranged between one and 44 per cent.

Reference to the nature of vehicle damage occurred somewhat less often (although insignificantly) in out-of-town accidents. Likewise, specifications of vehicle damage in terms of a dollar amount did not differ systematically between in-town and out-of-town accidents. However, the unweighted average of vehicle damage, when specified, was much greater in out-of-town reports (the difference largely arising from the one outlying value--mention by the Kitchener-Waterloo Record).

Few references were made to damage to property other than vehicles. The weighted average proportions were 11 per cent for in-town and 4 per cent for out-of-town accident reports. It was noted that the larger newspapers made few references to property damage, although they were not the only ones. In contrast to the amount of vehicle damage, the unweighted average property damage was considerably greater for in-town than out-of-town accident reports, but again the dollar values mentioned by one newspaper (the Toronto Star) were largely responsible for this.

1.8.5 Category E: Type of Collision, Accident Sequence and Road User Involvement

Type of collision (e.g. rear end, head-on, etc.) was reported at a moderate rate, as may be noted from the ranks it received. In-town it received a weighted average proportion of .31 with a rank of 16.5, and out-of-town .34 with a rank of 13.5 (see Table I.6). Range of proportions was very marked, varying in-town from 1.00 (Kenora, Barrie, Kitchener-Waterloo) to zero (Trois Rivières), and out-of-town from 1.00 (Kenora, Barrie, Kitchener-Waterloo) to .11 (Toronto Star). When the weighted average proportions for the low and high circulation papers are compared, it is noted that lower circulation papers report information on type of collision more frequently than the bigger newspapers (high circulation: .26 in-town and .28 out-of-town; low circulation: .78 in-town and .82 out-of-town). The strength of this finding was tempered by the fact that rank correlation between circulation volume and collision type reporting rate of in-town accidents amounted to *rho* = -.40, which was not significant at the .05 level. However, the same rank correlation for out-of-town accidents was found to be *rho* = -.62, which was significant at the .05 level.

Sequence of an accident (or a step-by-step account of how the accident occurred) also received a moderate reporting rank: for in-town, a weighted average proportion of .50 and a rank of 14, and out-of-town .33 with a rank of 15. The range of proportions varied in-town from .71 (Kenora) to .03 (Barrie) and out-of-town .73 (Belleville) to .14 (Toronto Star). High circulation papers reported a weighted average proportion of .52 compared with .21 for low circulation papers as regards mention of accident sequence in in-town reports. Thus, it would seem that if high circulation papers reported an in-town accident, more information on the actual sequence of events would be given. This does not hold true for out-of-town accidents (.28 high circulation and .38 low circulation papers). When comparisons were made between the weighted

average proportions of the in-town and out-of-town reports, it was concluded that the out-of-town reports generally contain more information on accident sequence than in-town reports.

The two preceding content variables of type of collision and accident sequence have a high potential of educational value by showing step by step how an accident occurs, and wide publication of this information might contribute to the reader's knowledge of how to avoid such circumstances.

There are no statistics available on the actual occurrence of hit and run accidents in either Ontario or Quebec annual collision reports, therefore it was impossible to ascertain whether or not the proportion of reporting for this was indicative of this type of accident. The weighted average proportion for in-town was .08 with a rank of 26.5 and out-of-town .02 with a rank of 33.5. The range of proportions was small: in-town from .18 (Toronto Globe and Mail) to zero (Kenora, Belleville, Kitchener-Waterloo and Trois Rivières) and out-of-town from .07 (Kenora and Toronto Globe and Mail) to .01 (Kingston, Toronto Star, Le Soleil, Quebec, and La Presse, Montreal).

When statistics for fatal and injury collisions involving cyclists and pedestrians within the provinces of Quebec and Ontario are considered it was shown that in 1974 5.1 per cent of these accidents involved cyclists. It was noted that 7 per cent of all in-town accident reports and 3 per cent of all out-of-town reports deal with cyclists. As most accidents mentioned in the newspaper refer to fatal and injury accidents (85 per cent of all in-town reports and 94 per cent out-of-town, see Table I.6), it would seem fair to conclude that the percentage of cyclist-involved accidents mentioned in the Ontario papers corresponds reasonably well with their proportional occurrence in actual fact. This also holds true for Quebec with 5.9 per cent of all fatal and injury accidents in 1974 occurring to cyclists, with the newspapers reporting this type of accident 7 per cent in-town and 4 per cent

out-of-town. A slightly higher reporting in-town and than out-of-town of cyclist accidents may well be due to the type of location where cyclists tend to get involved in accidents.

Pedestrian-involved accidents on the whole received greater attention than cyclist-involved accidents. Weighted average proportion for in-town was .23 with a rank of 18 and out-of-town .18 with a rank of 17.5. When compared to accident statistics it was shown that in 1974 10.3 per cent of accidents involved pedestrians, with the reporting rate being in-town 22 per cent and out-of-town 17 per cent. The same pattern holds for Quebec. In 1974 13.7 per cent of injury or fatal accidents in Quebec involved pedestrians, with the reporting rate being in-town 25 per cent and out-of-town 20 per cent. In both cases reporting rates were 5 per cent greater than out-of-town reports. It may be noted that compared to cyclist-involved and other types of accidents, those involving pedestrians are reported more frequently.

I.8.6 Category F: Accident Causes Mentioned or Implied

From an accident prevention point of view, the mentioning by mass communications media of events and conditions that caused or contributed to accident occurrence may well be considered as of the greatest educational importance. Accident cause as a variable was scored in a very generous manner, being given a positive mark whenever accident causes were implicitly mentioned or more subtly implied. Weighted average proportions were .31 in-town with a rank of 16.5, and .21 out-of-town with a rank of 16. Range of proportions varied between .45 (Toronto Globe and Mail) and .04 (Barrie) in town, and out-of-town from .46 (Toronto Globe and Mail) to .03 (La Presse, Montreal). The low circulation papers had a weighted average proportion of in-town .15 and out-of-town .29, and high circulation papers in-town .32 and out-of-town .20. High circulation papers, when reporting an in-town accident, give more information. This pattern does not follow through

for out-of-town reports as the low circulation papers give somewhat more information.

Reporting on driver's condition was very rare, having a weighted average proportion of in-town .03 with a rank of 35.5 and out-of-town .03 with a rank of 30. The range of proportions was small: in-town from .13 (Kenora) to zero (Timmins, Trois Rivières and La Presse, Montreal) and out-of-town from .09 (Toronto Globe and Mail) to zero (Kenora, Granby and La Presse, Montreal).

References to seatbelts were also very rare, weighted average proportions being in-town .03 with a rank of 35.5 and out-of-town .001 with a rank of 34. The Toronto Star was the only paper that made mention (.03) in-town, and for out-of-town the Kingston Whig-Standard, The Kitchener -Waterloo Record and Le Soleil, Quebec, were the only papers (each with .01). This low mention was noteworthy considering the close connection it has with injuries and fatalities.

Reference by newspapers to police charges was treated in a number of ways. Any mention of charges (even if it were to say that no charges were laid) was scored by the variable "police charges" (F_4). The next variable, "charges laid" (F_5), was scored positively only when the report said that police had actually laid charges. The variable "test given" (F_6) was scored positively whenever reference to a person being subjected to blood alcohol concentration tests was made regardless of the results being mentioned or what they were. Variable F_7, "charges for impairment," was scored positively whenever the paper mentioned that such charges had been laid.

While several newspapers made no reference to any of these variables at all, the weighted average proportions were .13 (in-town) and .06 (out-of-town) for mention of police charges, and .13 (in-town) and .05 (out-of-town) for mention of charges that were actually laid. It was calculated that if in connection with an accident a charge is laid

by the police, the (weighted) average likelihood of this fact being communicated by the newspapers was about three in one thousand. The weighted average proportion of mention by newspapers of charges being laid for impaired driving was .006, or summarizing the data in another way, of 10,945 police charges laid in connection with accidents, only 36 were quoted by the press in the context of accident reports. Of 989 charges for impaired driving, 12 would have reached the imaginary reader who read every single accident report in eleven different papers.

I.8.7 Category G: Human Consequences

The variable "emotional content" was given a rating of none, some or much. The scoring of this variable was inevitably somewhat subjective, and especially the rating "some" for some content materials might be open to dispute. "Much" emotional content within an accident reported would be scored if the accident and its consequences were lamented by the reporter or other individuals. The rating "some" emotional content was given when the language was not clearly emotional and yet indicated that there was something unusually sad or upsetting about the accident. A rating of "none" for emotional content was given in the remaining cases.

For both in-town and out-of-town reports, a clear pattern presents itself. Weighted average proportions were in-town: none .61, some .28 and much .11, and out-of-town: none .74, some .13 and much .13. The only exception to this pattern was the out-of-town accidents for the Toronto Globe and Mail which did not score highest on "none" (none .14, some .17 and much .41). On the whole, reporting is done in a straightforward or unemotional manner, with slightly more emotional content in the in-town accident reports.

The driver's personal life (information about the person(s) involved, other than name(s), age(s) and address(es), such as profession, personal history events, etc.) had a low reporting rate. The weighted average proportion was in-town .15 with a rank of 22 and out-of-town .12 with a rank of 19. The range of proportions varied in-town from .24 (Toronto Star) to zero (Kenora, Barrie, Timmins and Belleville) and out-of-town from .28 (Toronto Globe and Mail) to zero (Kenora and Barrie). For low circulation papers the weighted average proportion was .06 in-town and .07 out-of-town and for high circulation papers .16 in-town and .13 out-of-town. It was noted that high circulation papers give slightly more information of this type than low circulation papers when they report an accident (both in-town and out-of-town).

Driver's goal of trip (i.e. on way home after work, going somewhere on a holiday, etc.) was a rarely reported variable. Weighted average proportions were in-town .06 with a ranking of 31.5 and out-of-town .04 with a rank of 26.5. The range of proportions was narrow: in-town from .20 (Trois Rivières) to zero (Kenora, Barrie, Belleville, and LeSoleil, Quebec) and out-of-town from .09 (Toronto Globe and Mail) to zero (Barrie). Again, in-town accident reports provided slightly more information of this nature than out-of-town reports.

Large proportions of accidents reported make reference to fatalities and injuries. In the Ontario papers on the average 88 per cent of in-town reports and 92 per cent of out-of-town reports mention injuries, while the percentages for fatalities are 70 and 81 per cent respectively. In contrast to these findings, it was shown that in 1974 only approximately 37 per cent of all accidents produced fatal or non-fatal injuries. Ontario newspapers do select more serious accidents for reporting to their readers. The Quebec situation was very similar. In 1974 one per cent of accidents occurring in Quebec resulted in fatalities, 24 per cent in personal injury, and 75 per cent in physical damage only. In contrast, 85 per cent of all in-town and 94 per cent of all out-of-town reports referred to injuries (including fatalities).

Mentioning of the specific type of injury or injuries incurred by the accident victims followed the mentioning of injuries quite closely, indicating that if injuries are mentioned their nature is also, in most cases. Action taken with victims (transportation to hospital, morgue, etc.) had a weighted average proportion of in-town .43 with a rank of 15, and out-of-town .18 with a rank of 17.5. Range amongst proportions went in-town from .78 (Granby) to .06 (Kenora) and out-of-town from .90 (Kitchener-Waterloo) to .01 (La Presse, Montreal). Range amongst proportions went in-town from .78 (Granby) to .06 (Kenora) and out-of-town from .90 (Kitchener-Waterloo) to .01 (La Presse, Montreal). For in-town reports, low circulation papers reported this variable slightly more than high circulation papers (weighted average proportion .11 and .33 respectively). Although the weighted average proportions indicated that in-town reports were more likely than out-of-town reports to contain this information, as many as five of the papers, when considered individually, showed a pattern in the opposite direction.

I.9. Discussion of Content Findings

With a view to investigating the manner in which the Canadian public is being informed regarding traffic accidents by mass communication media, three sources of data were utilized in Part I. A content analysis was made of the accident reports published by twelve newspapers appearing in Quebec and Ontario in a three-month period in 1974. These newspapers varied in circulation volume from about 4,000 to 731,000 daily copies. The accident reports were subdivided into two categories: reports on accidents that happened within the limits of the city in which the newspaper was published and those reports on traffic accidents that occurred elsewhere. These two categories were called in-town accident reports and out-of-town accident reports respectively. A total of 1,834 accident reports were identified in the newspapers and these were analyzed on 51

different variables of content in order to determine the frequency in which various elements of accident information are provided by the newspapers to their readers.

These data were compared with government statistics on road accidents and with information obtained from the police forces in the communities where the newspapers were published. Thus, it was possible not only to determine what percentage of actually occurring accidents is mentioned by the printed press, but also to assess what particular features of individual accidents are mentioned by the newspapers. With this in mind, the content variables were made to include physical aspects of the newspaper articles (such as size and the use of pictures), time, accident location and roadside conditions; personal data on the individuals involved; vehicle characteristics and damage; type of collision and accident sequence; reference to factors causing the accident and accident consequences.

The most salient findings were as follows. When taking the circulation volume of individual newspapers into account, on the average only about two per cent of all in-town accidents were mentioned by newspapers, which showed a wide variation in this regard: from 66 per cent to one-tenth of one per cent*. When studied from month to month, the individual newspapers showed a very marked consistency in the level of these in-town reporting rates. It was also observed that the month-to-month fluctuations in the number of in-town accident reports in individual papers corresponded to the variations in the number of accidents occurring

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* A parallel inventory was made of the newscasting of accidents in two radio stations, CKLC and CKWS, and one television station, CKWS-TV, all located in Kingston, Ontario. The time period was the same as in the newspaper study. Of 396 reportable in-town accidents, 5 (or 1.3 per cent) were mentioned by CKLC (AM and/or RM), 10 (or 2.5 per cent) by CKWS AM and/or FM, and 6 (or 1.5 per cent) by CKWS-TV. The numbers of out-of-town accidents mentioned were respectively 28, 80 and 64. The newspaper published in the

in the communities where those newspapers appeared. On the other hand, the month-to-month fluctuations in the number of actually occurring out-of-town accidents was not reflected by the rates in which these accidents were reported by the newspapers. Individual papers were found to be remarkably consistent in the number of out-of-town accidents reported from month to month.

In general, the newspapers contained more out-of-town than in-town accident reports, the ratio being about three to one. Some newspapers, however, showed a reversed pattern, with in-town accident reports outnumbering out-of-town accident reports. Paradoxically, the newspapers appearing in smaller communities, where fewer accidents happen, had a significantly higher absolute number of in-town accident reports than the larger newspapers published in larger communities.

Considering the number of accident reports published on the various days of the week, it was found that more out-of-town reports appeared on Mondays than could reasonably be expected on the basis of actual accident occurrence on different days of the week. However, such a bias was not observed with regard to in-town accident reports.

There was a strong correlation between the frequencies of elements of content in in-town and out-of-town accident reports. Apparently, the same reporting style is being applied in both cases. There was generally more information in the in-town reports, they were larger in size as measured by the number of lines than the out-of-town reports, more often printed on the front page or on a section front, and more often accompanied by picture. In contrast to this state of affairs, the out-of-town accidents reported were

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same city (see Tables I.4 and I.5) reported 10.4 per cent of the in-town accidents and referred to 177 out-of-town accidents. This would suggest that reporting rates of accidents in radio and television newscasts are considerably lower than those in newspapers.

more serious in terms of injuries and fatalities. Thus, on the average, the more serious accidents are described by the press in lesser detail and receive less prominence in terms of space and location within the newpapers.

If the relative frequencies of property damage, personal injury, and fatal accidents occurring in Quebec and Ontario are compared with a similar classification of the accident reports, it is obvious that the injury accidents and especially the fatal accidents are given the greatest attention. In fact, only in the smaller papers is substantial reporting made of accidents resulting in vehicle and/or other property damage. Accidents in which pedestrians are involved would seem to receive more attention than their actual rate justifies, but this is not so for accidents involving cyclists.

A very generous scoring of reference to accident causes and contributing factors resulted in an average mentioning rate of 31 per cent in in-town reports and 21 per cent in out-of-town reports. This indicates that newspaper readers are only infrequently informed of any event or condition that played a part in the occurrence of the accident described. Moreover, even if some information is given, it is usually vague and incomplete. For instance, "driver lost control" is the most frequently mentioned accident cause, but the reader is not told what factors caused this loss of control. Reference to seat belt use was more rare still: average mentioning rate was 6 per cent in-town and 3 per cent in out-of-town reports.

The variables that receive high rates of mention (more than 60 per cent) include the following: the number of vehicles involved in the collision, the date, time and location of the accident, the occurrence of injuries and fatalities, and the driver's name and address.

Mention of police charges was made on the average in 13 per cent of

all in-town reports and in 5 per cent of all out-of-town reports. With reference to the total number of charges laid by the police in connection with the actual occurring accidents, this means that only one-third of one per cent of the total number of in-town charges are mentioned by the newspapers.

Charges for impaired driving were mentioned in 3 per cent of the in-town accident reports and in 2 per cent of the out-of-town reports. The former figure implies that only .6 per cent of all in-town charges for impaired driving which followed the occurrence of an accident are communicated by the press.

Comparison between newspapers with a large circulation volume and the smaller papers reveals that the bigger papers report more out-of-town accidents relative to the number of in-town accidents reported. The larger papers also report on out-of-town accidents that happened at a greater distance from the city in which the paper is published. On the other hand, the smaller papers more often stated name and address of the driver(s) involved in the accident, they gave more information on collision type (e.g. rear-end, side-swipe), but less on collision sequence (e.g. speed too fast, improper passing).

Few differences were observed between papers published in Ontario and those appearing in Quebec, with the exception that the Quebec papers published more photographic pictures of both in-town and out-of-town accidents, but mentioned even fewer charges for impaired driving or otherwise in connection with accidents.

From these findings, it seemed fair to conclude that the state of affairs in accident reporting by daily newspapers is not optimal from the point of view of informing and educating the Canadian public with respect to the size and nature of the traffic accident problem.

The next step was to investigate reading habits, expectations, motivations and reactions with respect to accident reports among newspaper readers.

The central question in Part II, the readership analysis, was to ascertain what elements of the current accident reporting style would have to be retained in potential modifications of accident reporting in order that their interest as reading material for the public be maintained.

PART II

READERSHIP ANALYSIS

II.1 INTRODUCTION

There were three types of considerations in the phrasing of recommendations and suggestions for a modified accident reporting practice:

(1) the accident reports should be written such that large segments of the general public will actually read them,

(2) the reports should be educational, and

(3) technical and legal implications should be taken into account.

Part II describes the results of an interview study with newspaper readers in Kingston, Ontario, as respondents. The data was gathered and analyzed with the specific purpose of obtaining information regarding the first point above. This information was then used in designing a modified accident reporting style, a prototype of which was subsequently tested on its effectiveness by means of a field experiment in Part III. Specific questions that were to be answered by the readership analysis were the following:

(1) What percentage of newspaper readers read accident reports?

(2) Do newspaper readers in different demographic strata (age, sex, educational background, occupational status) pay differential amounts of attention to accident reports in the daily press?

(3) Is the reading of accident reports related to personal accident experience of the individual?

(4) What are the reasons given for reading traffic accident reports?

(5) What elements of report content are being remembered by the reader?

(6) Do readers extract any information with respect to accident causation from accident reports?

(7) Do readers form subjective opinions about the causation of accidents?

(8) Do readers feel that the reading of current accident reports is in any way helpful to decisions and habits with respect to their own use of the road?

(9) Are there particular aspects to accident reports that readers would like to see included but are presently absent in these reports?

(10) What elements of the accident reporting style are mentioned by readers as important, interesting and newsworthy?

II.2 PROCEDURE

A random sample from the population of Kingston drivers was queried by questionnaire of the semi-structured type. The interviews (conducted by three interviewers) were held by telephone over 13 weekday evenings between October 25 and November 10, 1977. The target sample (randomly selected from Kingston's 1977 telephone listings) was set at 300 interviews which at the end of the interviewing had been exceeded, the final total being 392. Of all numbers dialled, 38 per cent lead to complete interviews and 62 per cent were unsuccessful for various reasons (no answer, no driver's licence, out-of-service, and refusal to be interviewed).

II.3 FREQUENCY OF READING THE PAPER AND ACCIDENT REPORTS

The degree of interest in reading newspapers, and accident reports in particular, was investigated by means of the first four questions in the interview. It was found that 67 per cent indicated reading the paper 5-6 times a week, 9 per cent 4-5 times, and 22 per cent once or twice. Only 2 per cent of the interviewees reported reading a newspaper less than once or twice a week. Correspondingly, 56 per cent had read

the paper on the day of the interview and an additional 20 per cent the day before.

Spontaneous (i.e. unprobed) responses to the question of what the respondent recalled having read about have been tabulated in Table II.1 (the terminology of which is that of respondents). For some of these content categories, comparisons of readership interest and the amount of space regarding various content categories (as measured in cm^2 for the newspapers issued during the interview period) could be made. Ratios smaller than one indicated little interest relative to the amount of space in the paper, ratios greater than one indicating strong interest. As Table II.2 shows, relative reader interest was strongest for the first page, second for traffic accidents, third for editorials (narrow definition), fourth for sports, etc.

A direct probe of respondents' reading habits concerning traffic accidents produced the following responses:

spontaneous mention of having read accident reports 5%
mention of regular reading of accident reports, following directed question 37%

TABLE II.1

REPORTED READING FREQUENCIES (SPONTANEOUS MENTION) OF VARIOUS NEWSPAPER CONTENT CATEGORIES

front page	50%	classified ads	10%
sports	30%	crime	10%
all items	26%	financial/economy	9%
headlines	21%	world news	7%
politics	21%	traffic accidents	5%
entertainment	17%	courts	4%
eds	15%	real estate	3%
local news	13%	"A Closer Look"*	1%
editorials	12%	weather forecast	1%
women's page	11%	religion	1%
deaths/births	11%	ongoing special events	1%

* In depth analyses of some economic, historical, political, scientific, medical, ecological, etc. issue, usually occupying the full page opposite the editorical page in the Whig-Standard, Kingston, Ontario.

TABLE II.2

READERSHIP PERCENTAGES AND PROPORTION OF NEWSPAPER SPACE REGARDING PARTICULAR CONTENT CATEGORIES

	Readership Percentage	Space Percentage	Ratio
front page	49.5	2.66	18.6
traffic accidents	4.9	.34	14.4
editorials (narrow def.)*	11.5	.89	12.9
sports	30.4	6.19	4.91
editorials (broad def.)*	11.5	2.66	4.3
weather forecast	.8	.37	2.16
classified ads	9.9	15.46	.64
"A Closer Look"	1.0	2.66	.38

* The narrow definition refers only to the space occupied by the editorial column written by the editorial staff of the newspaper itself, while the broad definition pertains to the entire editorial page.

occasional reading, according to directed question 49%
never reads accident reports, according to directed question 9%

As concerns recency of last traffic accident report read 29 per cent reported having read one within the last week, 18 per cent within the last six months, 2 per cent over a year ago, 27 per cent could not remember and 8 per cent said they had never read one.

On the basis of these findings, it was estimated that in any two-day period about 27 per cent of the entire driver population read about accidents, while 38 per cent of those drivers who read the newspapers in any two-day period read about accidents. It was also concluded that reading frequency of accidents was many times greater than would be expected on the basis of their prominence in the newspaper.

Recall of reading accident reports was strongly influenced by several reporting features of accident reports. Whether or not there was a

picture accompanying the report and the degree of emotionality in the write-up were found to be significantly rated to the likelihood of the subject saying he had read a report. The presence of a photograph also had the effect of increasing the proportion of the sample who indicated having read about accidents today from 12 per cent (no picture) to 43 per cent.

II.4 READING OF ACCIDENT REPORTS AND DEMOGRAPHIC CHARACTERISTICS

In order to investigate relationships between the frequency of reading accident reports on the one hand and demographic characteristics on the other, the former variable was classified in four categories:

(a) those who mentioned reading accident reports spontaneously

(b) those who maintain they read them regularly after being asked

(c) those who read them occasionally, and

(d) those who never read them.

Frequency of reading about accidents was significantly related to sex (*tau* = .17, $p < .0005$), female respondents reading them more frequently. The same was found for older interviewees (*tau* = .17, $p < .0005$). Less educated persons show a higher frequency as well as those of a lower socio-economic index (*tau* = .20, $p < .0001$ and *tau* = .16, $p < .005$).

The relationship between these demographic variables and the recency of the latest accident report read shows a very similar pattern. Recency is higher in women (*tau* = .09, $p < .03$), in older respondents (*tau* = .19, $p < .0001$) and in the less well educated (*tau* = .10, $p < .01$).

As far as the frequency of newspaper reading in general was concerned,

it was higher in older individuals (*tau* = .34, $p < .001$), higher in drivers with high annual mileages (*tau* = .08, $p < .04$), higher in individuals with more personal accident experience (*tau* = .11, $p < .02$), and higher in individuals characterized by a high frequency of reading about accidents (*tau* = .25, $p < .0001$).

The results were very similar with respect to the recency of the latest newspaper issue read. Those who reported to have read a more recent issue were older (*tau* = .21, $p < .0001$), had a more frequent personal accident experience (*tau* = .10, $p < .02$) and read about accidents with higher frequency (*tau* = .22, $p < .0001$).

Spontaneous mention of having read the front page in particular was found to be more common in individuals of higher educational and socio-economic levels (*tau* = .18, $p < .0001$ and *tau* = .13, $p < .002$).

In summary, it may be noted that older people read the newspaper more frequently and were more interested in reading about accidents. Women also showed more interest in reading about accidents. Personal accident experience was positively associated with reading newspapers. Education and socio-economic status were found to be related to a particular interest in the front page (the higher the level, the more interest), and reading of accidents more common among readers of lower educational and socio-economic levels. However, although significant, all these relationships are relatively weak.

II.5 PERSONAL ACCIDENT EXPERIENCE RELATED TO THE READING OF ACCIDENT REPORTS

There were two variables concerned with individual accident experience:

(a) whether or not the respondent had been involved in an accident in which he/she was at fault or not, and

(b) the recency of accident experience.

The first variable was measured at three levels:

(i) no accident experience (38.7 per cent of respondents),

(ii) accident experience but not at fault (40.7 per cent), and

(iii) accident experience and at fault (20.6 per cent).

The recency variable was also assessed at three levels:

(i) never (39 per cent),

(ii) at least six years ago (37 per cent), and

(iii) less than six years ago (24 per cent).

Individuals with more or less recent accident experience were found to be more frequent newspaper readers (tau = .11, p < .02), but no significant association was found between accident experience and the frequency of reading about accidents (tau = .05, p < .15).

Male drivers were found to have more accident experience (tau = .11, p < .01) of more recent vintage (tau = .12, p < .01). Older drivers also had more accident experience (tau = .09, p < .03). Annual mileage was positively associated with accident experience (tau = .18, p < .0001) and recency (tau = .20, p < .0001). Better educated individuals had more accidents (tau = .16, p < .02), as well as more recently (tau = .16, p < .02).

Individuals with positive scores for personal accident experience did have a greater interest in the overall mention of police charges (tau = .10, p < .03) and vehicle type (tau = .10, p < .03) within the accident report. They also indicated to prefer a comparatively high driving speed.

The recency of personal accident experience was found to be related to the overall mention of police charges (tau = .13, p < .003), the belief that speeding is one of the main causes of accidents (tau = .09, p < .04), the fact of being more irritated by slow than by fast drivers

(*tau* = .09, $p < .03$), and a high preferred moving speed (*tau* = .12, $p < .005$).

Of all respondents, 9.9 per cent indicated that the accident(s) they were involved in had been mentioned by the newspaper, but this had no bearing upon their interest in reading about accidents (*tau* = .04, $p < .18$).

II.6 REASONS GIVEN FOR READING TRAFFIC ACCIDENT REPORTS

Quite a variety of responses were given as to why the respondent would read an accident report. From all the responses given, the following are the most important in terms of mention (combined spontaneous and probed responses) at a level of 10 per cent mention rate or higher:

to see if anyone known was involved	27%
as any other news item	21%
title/headline caught eye	14%
photograph caught eye	10%

Other responses included such responses as: to see if injuries occurred (4 per cent), what the damages were (1 per cent), interested in accident causes (5 per cent), would read if they had heard about it before (7 per cent), if it were in an area they knew (6 per cent) or to read them as a personal warning (3 per cent) and "to see how dumb people are" (1 per cent).

Responses of a negative character, indicating why respondents did not read traffic accident reports, had very low occurrence rates. For example, 5 per cent were simply not interested and 3 per cent had a personal dislike of accident reports.

That as many as 21 per cent of the interviewees say that they read accident reports for the same reason as "any other news item" may

indicate that reading about accidents is a more or less habitual and routine activity of many newspaper readers. Interviews conducted over the phone were obviously not the most appropriate method of assessing the extent to which morbid curiousity plays a part. These types of responses ("joy," "relief," "morbidity," "tragedy" and "sympathy") were very sporadic indeed. It was noted that this issue is not of very great important to the main objective of the study: to determine how the educational value of reporting may be enhanced.

II.7 RECALL OF ELEMENTS IN ACCIDENT REPORTS

What elements of content in traffic accident reports are being remembered by the reader. Some 50 per cent of the respondents could answer the question, the responses falling into 50 different categories. Table II.3 contains a column labelled "recall" in which the percentage of respondents recalling a content category are listed, as well as the rank order of the frequency of elements remembered. The ten most commonly remembered content components are:

(1)	fatalities	28%
(2)	accident location	25%
(3)	injuries	24%
(4)	type of collision (head-on, single vehicle, side-swipe, etc.)	13%
(5)	accident sequence	12%
(6)	driver's age	11%
(7)	causes	10%
(8)	driver's name	9%
(9)	action taken (victim taken to hospital, morgue, etc.)	7%
(10)	nature of damage to car	7%

The frequency of recall of particular content components may be compared with the frequency of occurrence of these components in the newspaper as determined in Part I (Table II.3). It should be noted that recall does not distinguish between in-town and out-of-town accidents and refers to one newspaper (Kingston Whig-Standard), not twelve as in Part I of this study.

TABLE II.3

WEIGHTED AVERAGE PROPORTIONS AND RANKS OF CONTENT OCCURRENCE IN IN-TOWN AND OUT-OF-TOWN ACCIDENT REPORTS AND PERCENTAGE UNAIDED RECALL

Content Category	In-Town		Out-of-Town		Recall	
	Rank	Weighted Average Proportion	Rank	Weighted Average Proportion	Rank	Percentage
Number of vehicles	1	.95	1.5	.94	12	6.2
Date	2	.91	6	.59	15	4.1
Location	3	.88	9	.50	2	25.1
Injuries	4	.85	1.5	.94	3	24.4
Time	5	.64	12.5	.34	15	4.1
Fatal	6.5	.63	3	.83	1	28.0
Driver's Name	6.5	.63	4	.66	8	8.5
Driver's Address	8	.61	5	.61	17	3.9
Victim's Address	9	.59	11	.47	19	3.3
Victim's Age	10	.57	10	.48	11	6.4
Victim's Name	11.5	.51	8	.51	15	4.1
Driver's Age	11.5	.51	7	.57	6	10.8
Accident Sequence	13	.50	14	.33	5	12.3
Action taken	14	.43	16.5	.18	9	7.4
Type of Collision	15.5	.31	12.5	.34	4	12.7
Causes	15.5	.31	15	.21	7	10.2
Pedestrians Involved	17	.23	16.5	.18	16.5	1.5
Road Character	18	.21	19	.07	23.5	2.3
Picture	19.5	.17	24.5	.04	21.5	2.6
Nature of Damage to Car	19.5	.17	20.5	.06	10	6.9
Driver's Personal Life	21	.15	18	.12	13	5.4
Charges Laid	22	.13	22	.05	20	3.1
Nature of Damage to Property	23	.11	24.5	.04	23.5	2.3
Monetary Damage to Car	24.5	.08	20.5	.06	25	2.0
Hit and Run	24.5	.08	31.5	.02	21.5	2.6
Monetary Damage to Property	27	.07	34.5	.01	34.5	0.3
Name of Officer	27	.07	28	.03	34.5	0.3
Cyclists Involved	27	.07	28	.03	31	0.8
Driver's Goal of Trip	29.5	.06	24.5	.04	31	0.8
Vehicle Make	29.5	.06	24.5	.04	33	0.5
Road Condition	33.5	.03	34.5	.01	26.5	1.5
Vehicle Year	33.5	.03	31.5	.02	36	0.0
Driver's Condition	33.5	.03	28	.03	28	1.3
Seat Belts	33.5	.03	36	.001	31	0.8
Tests (BAC)	33.5	.03	31.5	.02	29	1.1
Charges laid for impaired driving	33.5	.03	31.5	.02	18	3.4

Correlations were calculated between content frequencies in newspapers and in reader recall. For the in-town accident reports, this produced a *rho* = +.78 (n = 36, $p < .01$) and for the out-of-town reports, *rho* = +.99 (n = 36, $p < .01$), while the correlation between content frequencies of the in-town and out-of-town reports was *rho* = +.95. It can thus be seen that there is a marked relationship between newspaper practice in reporting particular elements and the readership's recall of these elements; things that are more often said by newspapers are also more often mentioned as remembered by the public. Little could be said about the causal process underlying this relationship as many interpretations may be put forward. (For example, repondents tend to remember those elements they find interesting and newsmen in general report elements they (more or less correctly) assume to be of interest to the readers.)

Although in general recall rates are much lower than reporting rates, some marked differences were noted as well. Considering a difference of 10 ranks or more as being indicative of major comparative differences, it was noted that the following content categories were more prominent in reporting than in presumed recall:

- the number of vehicles involved
- the date of the accident
- the time at which the accident occurred
- the address of the driver
- the address of the victim
- a pedestrian being involved.

The following items are relatively more pominent in recall than in reporting:

- the type of collision
- the nature of the damage to car(s)
- hit and run
- charges laid for impaired driving.

Several categories of recall not presented in Table II.3 but mentioned by more than 1 per cent of the respondents are as follows:

size of vehicles involved	6.2%
vehicle type	16.4%
speed	1.8%
emotional content	6.2%
number of people involved	11.7%
sex of those involved	5.4%

To summarize, about half of all respondents remembered particular content elements of the last accident report read. The frequency of recalling particular elements shows considerable correspondence with the frequency of these elements in newspaper accident reports. Items which were relatively infrequently recalled include the date and time of the accident and the address of the driver and victims. Because this type of information would appear to be relatively difficult to remember, it would seem fair to conclude that the contents of presumed recall does not simply reflect reader interest only, but does indeed show the influence of forgetting to some extent.

II.8 INFORMATION EXTRACTED WITH RESPECT TO ACCIDENT CAUSATION

Do readers extract any information with respect to accident causation from accident reports. The percentage of respondents who could remember a specific report and answer the question was 50 per cent. Of these, 25 per cent could also recall the article mentioning causes, 48 per cent responded that causes were not mentioned, and 27 per cent could not remember if causes were mentioned.

Although only 25 per cent could remember causes being mentioned, respondents were asked for their own theories on the cause of these reported accidents. The strength of the theory (how well thought out or definite, as judged by the interviewer) had the following results: 12 per cent had a strong theory, 13 per cent an indefinite theory, and 27 per cent attempted a weak explanation. Assessment of the theory's supporting facts resulted in: 11 per cent

with strong facts to support the causation theory, 11 per cent with indefinite facts that could indicate causation, and 30 per cent with very weak or no facts to support their view as to why the accident occurred.

The source of the facts used to support their causation theories was: 5 per cent, the newspaper; 34 per cent, a combination of newspaper and personal "ideas"; and 12 per cent, personal "ideas" only. The question was not applicable to the remainder of the respondents.

Mention of specific causes of a particular accident which the respondent remembered reading about was at a very low level. Responses given were (spontaneous and probed answers combined):

speeding	7%
drinking	5%
carelessness	2%
not paying attention	2%
illness	2%
weather	2%
mechanical failure	2%
lost control	2%
fell asleep, fatigue	2%

Theories on the causation of accidents are drawn out from what was reported and, even when there are no facts to support a theory, respondents still tend to generate ideas about why a particular accident occurred. This appears to reflect the strong interest that readers have in knowing the causes of accidents.

II.9 POPULAR VIEWS ON THE MAJOR ACCIDENT CAUSES

Respondents were queried as to what they thought the main causes of accidents were in general. This question produced some forty distinguishable types of responses, the most frequent of which were the following:

drinking and driving	47.8%
lack (lapses) of attention	47.8%
speeding/going too fast	31.2%
aggressive/competitive driving	8.3%
disobeying signs or laws	6.9%
lack of driving skill	6.4%
lack of defensive driving	5.6%

It was of interest to note the above listed accident causes all relate to the driver, his attitudes and fallability, and not to deficiencies in vehicles or the road environment. Such causes were mentioned but by a small percentage of the readers (road conditions, 4.1 per cent; mechanical failure of the vehicle, 3.9 per cent; and weather, 0.8 per cent).

The predominant popular views of accident causation all focus upon the driver, without singling out a particular demographic subgroup in the driver population. Although culpability was attributed to "the young" (2.6 per cent) and "teenage drivers" (0.5 per cent), there was no strong tendency to scapegoat a particular class of people that can be delineated demographically.

II.10 PERCEIVED PURPOSES OF ACCIDENT REPORTING BY NEWSPAPERS

Do drivers feel that accident reports in the newspaper serve any purpose. Positive responses (spontaneous and probed) given by 5 per cent or more of the respondents were:

increases driver caution	21%
education/reminder to avoid similar accidents	18%
increases awareness of the likelihood of accidents	15%
just as a news item	14%
increases awareness of the quantity of accidents	6%
tells you who is involved	5%

Drivers who felt that accident reports were not useful gave the following answers:

not educational, not preventative, therefore will not change behaviour	13%
poorly written up, therefore useless	5%

The similarity between the positive and negative responses was noted. Both stress the educational/informative function of accident reporting, while some respondents feel that accident reporting does not adequately serve an educational purpose.

The potential uses of accident reporting as perceived by the driving public are thus the following: a general educational effect by increasing the awareness of likelihood of accidents and thereby enhancing driver caution, and a specific educational role in informing readers how to avoid accidents similar to the ones reported by the newspaper. It may be inferred then that respondents saw the need for more and better information on the quantity and specific causes of road accidents as a role the newspaper could fulfill.

II.11 UNSATISFIED INFORMATION WANTS REGARDING SPECIFIC ACCIDENTS

Are there particular elements of information that readers would like to know about but which are presently not included in accident reports (question 8)? Of all individuals interviewed, 70 per cent answered in the affirmative, responses scattered over as many as 39 different categories. Those obtaining 4 per cent or more are listed below:

causes	13%
police charges	7%
whose fault it was	7%
nature of injuries	5%
the name of driver	4%
the name of victim	4%

Accident causes was the most often mentioned category of lacking yet desired information. When cross-tabulations of this wish for more information against other variables were made it was found that those who read accident reports more often also want more information to be communicated ($tau = .10$, $p < .03$).

II.12 PUBLIC VIEWS OF WHAT IS OF INTEREST IN ACCIDENT REPORTING

Various approaches were taken to determine what were important, interesting and newsworthy elements in accident reporting style. Initially, the answers to two simple questions were considered:

(1) "What do you think was the most important information in the accident report?" and

(2) "Suppose you were a newspaper reporter, what would you write about accidents?"

Consequently, the responses to four questions were analyzed together in a comprehensive manner, resulting in the scoring of individual interview protocols in terms of what we call "overall mention variables." Scores for this overall mention were either one or zero. No mention of a variable in response to the following four questions would result in a score of zero, and a mention of the variable once, twice, three or four times would result in a score of one.

(1) What was remembered from the latest accident report read?

(2) What was considered the most important information in it?

(3) What they would have liked to have known in addition to what was reported?

(4) What they would write suppose they had the accident reporter's job?

Thus, the overall mention variable indicates whether a particular content variable was referred to during the interview or not.

Returning to the first approach ("the most important information"), it was observed that the following content categories received mention by at least 10 per cent of the respondents:

causes	30%
injuries	24%
fatalities	18%
name of victim	14%
name of driver	13%

It may be noted then that causes were considered not only as under-reported (see Section II.11) but also as the most important content element in the report (followed by injuries, fatalities and identities).

Responses, recorded from at least 10 per cent, to the question of what the respondent would write about if he were an accident reporter are as follows:

causes	56%
name of driver	23%
name of victim	23%
injuries	23%
location	20%
fatalities	19%
accident sequence	19%
damage to car	11%
damage to property	10%
time of accident	10%

Again causes are emphasized as to their importance as a reporting variable. The public is also interested in the "accident sequence" or the step-by-step account of how it happened, identities, injuries, fatalities, damage to vehicles and property, and the time of day the accident occurred.

Results of the analysis of the overall mention variables presented in the form of percentages, or proportions, and in terms of rank, are presented in Table II.4(a) to allow comparison with the frequency of the variables' occurrence in newspapers (Part II). Content variables for which there were no counterparts in Part II of the study are presented separately in Table II.4(b).

TABLE II.4(a)

WEIGHTED AVERAGE PROPORTIONS AND RANKS OF CONTENT OCCURRENCE IN IN-TOWN AND OUT-OF-TOWN ACCIDENT REPORTS AND PERCENTAGE OVERALL MENTION

Content Category	In-Town		Out-of-Town		Overall Mention	
	Rank	Weighted Average Proportion	Rank	Weighted Average Proportion	Rank	Percentage
	1	.95	1.5	.94	21.5	9
Date	2	.91	7	.59	28	6
Location	3	.88	10	.50	4	41
Injuries	4	.85	1.5	.94	2	52
Victim's Type of Injury	5	.66	3	.88	32.5	5
Time	6	.64	13.5	.34	17	14
Fatal	7.5	.63	4	.83	3	50
Driver's Name	7.5	.63	5	.66	5	38
Driver's Address	9	.61	6	.61	28	6
Victim's Address	10	.59	12	.47	28	6
Victim's Age	11	.57	11	.48	18	13
Victim's Name	12.5	.51	9	.51	6	35
Driver's Age	12.5	.51	8	.57	11.5	16
Accident Sequence	14	.50	15	.33	7	31
Action Taken	15	.43	17.5	.18	20	10
Type of Collision	16.5	.31	13.5	.34	14.5	15
Causes	16.5	.31	16	.21	1	68
Pedestrians Involved	18	.23	17.5	.18	41.5	2
Road Character	19	.21	20	.07	35	4
Picture	20.5	.17	26.5	.04	37.5	3
Nature of Damage to Car	20.5	.17	22	.06	8	19
Driver's Personal Life	22	.15	19	.12	21.5	9
Police Charges	23.5	.13	22	.06	14.5	15
Charges Laid	23.5	.13	24	.05	n.a.	n.a.
Nature of Property Damage	25	.11	26.5	.04	11.5	16
Monetary Damage to Car	26.5	.08	22	.06	32.5	5
Hit and Run	26.5	.08	33.5	.02	37.5	3
Monetary Damage to Property	29	.07	36.5	.01	37.5	3
Name of Officer	29	.07	30	.03	46	1
Cyclists Involved	29	.07	30	.03	46	1
Driver's Goal of Trip	31.5	.06	26.5	.04	41.5	2
Vehicle Make	31.5	.06	26.5	.04	46	1
Road Condition	35.5	.03	36.5	.01	19	11
Vehicle Year	35.5	.03	33.5	.02	50	0
Driver's Condition	35.5	.03	30	.03	32.5	5
Seat Belts	35.5	.03	38	.001	24.5	7
Tests (BAC)	35.5	.03	33.5	.02	32.5	5
Charges Laid for Impaired Driving	35.5	.03	33.5	.02	n.a.	n.a.

TABLE II.4(b)

RANKS AND PERCENTAGE, OVERALL MENTION

Content Category	Overall Mention	
	Rank	Percentage
Vehicle Type	9	18
Impaired Driver	10	17
Number of People	14.5	15
Whose Fault it Was	14.5	15
Speed	23	8
Size of Vehile	24.5	7
Emotion	28	6
Sex of Those Involved	28	6
Weather	37.5	3
Mechanical Failure	41.5	2
Fines	41.5	2
Traffic Condition	46	1
Witness Involved	46	1
Crime	50	0
Animal Involved	50	0

For the sake of readability overall mention variables (with percentages of at least 10 per cent) are as follows:

causes 68%
injuries 52%
fatalities 50%
location 41%
name of driver 38%
name of victim 35%
accident sequence 31%
damage to car 19%
vehicle type* 18%
impaired driving 17%
age of driver 16%
damage to property 16%
number of people 15%
whose fault it was 15%
type of collision* 15%
police charges 15%
time 14%
age of victim 13%
road condition* 11%
action taken* 10%

* vehicle type refers to size and class of vehicle (e.g. bus, small car, etc.); type of collision refers to rear-end, head-on, etc.; road condition refers to wet, slippery, etc.; action taken refers to victims taken to morgue, hospital, etc.

Content elements not readily noticeable in response to previous individual questions became apparent when all question responses were considered. These were: whether or not there was an impaired driver, whose fault it was, whether or not police laid charges, age of victim(s), the condition of the road, and consequent action taken.

Comparisons between content elements' overall mention and the frequency of its occurrence in the newspaper can be made (noting marked differences in ranked order). Respondents expressed an interest in causes which was in rank order 1 out of 51, as compared to actual in-town reporting rank order 16.5 out of 38 and 16 out of 38 out-of-town.

The nature of the damage to car ranked 8 out of 51 among the overall mention variables as against 20.5 (in-town) and 22 (out-of-town) out of 38 in the content analysis. Also in the content analysis number of vehicles and victim's type of injury had a relatively much lower rank order. Comparisons may point out these larger differences but they should be interpreted with caution because of the rather divergent ways in which the two classes of data (content analysis and interviews) were collected and processed.

II.13 OPINIONS OF PICTURES AND STYLISTIC ELEMENTS

The presence of a picture was found to be strongly related to the likelihood of the accident report being read (the proportion of respondents indicating having read a report being three times greater on days when a photograph accompanied a report). Would repondents include photographs if they were responsible for accident reporting. Thirty-four per cent said "yes", 34 per cent "no" and 32 per cent gave "conditional yes" answers.

Positive answers (above 5 per cent mention rate) were as follows:

picture has more impact/more impressive . . .	14%
picture has educational potential/ warning of what can happen	8%
attracts wider audience/more attention . . .	7%
better awareness/better caution/stop and think	6%
picture gives more information/details . . .	6%

The conditional responses (above 5 per cent mention rate) were as follows:

yes if only vehicles, no if gore	19%
yes if major accident, no if minor	6%
yes if educational, no if not	5%

It was seen that the conditionally affirmative responses were backed by reasons very similar to the reasons for affirmative answers. About one-third of the readers would include pictures if they had the properties that another one-third thought they had.

Negative answers (above 5 per cent mention rate) were as follows:

sensationalism/bad taste	15%
invasion of privacy	9%
print enough/photos unnecessary	7%

From the responses to the question of inclusion of photographs it may be seen that although photographs may be seen as serving a variety of useful purposes, concern was shown for what can be shown in good taste and what was not redundant to information in the text. Conditions recommended for inclusion may serve as useful guidelines, i.e. picture should be added only if they are in good taste (no "gore"), serve a purpose (educational) and in cases of serious accidents (to avoid constant visual bombardment).

References to style made throughout the interview by 65 per cent of the respondents were recorded . Responses above 10 per cent mention are as follows:

factual 17%
preventionary/precautionary emphasis 14%
interesting details, accident causation . . . 13%

Respondents preferred a straightforward reporting of the facts, an emphasis on prevention (demonstrating the needs and ways for precaution) and inclusion of interesting details that contributed to the accident (e.g. poor visibility). Other suggestions were: a follow-up story to provide more information (9 per cent); an educational emphasis, i.e. directly "teach" the reader (8 per cent); not to change the present style (8 per cent); and mention of human interest details would enhance the accident report (5 per cent). Six per cent of the respondents also expressed awareness of the legal difficulties in reporting fault of the accident.

II.14 TALKING ABOUT ACCIDENTS

Do people talk about accidents. If so, do they talk about information drawn from the newspaper? People did indeed discuss accidents, as only 4 per cent maintained they never did. Although 38 per cent could not remember the last time they talked about one, 37 per cent could remember talking about one within the last week, 15 per cent within the last two months, 27 per cent between two and six months and 3 per cent more than six months ago.

As far as the source of the information about the accident they discussed was concerned, 16 per cent responded it was from a newspaper source, 40 per cent from an unknown source (i.e. the respondent could not recall if he had seen it in the paper) and 44 per cent not from a newspaper source.

Respondents did talk about traffic accidents faily regularly, but did not use the newspaper as a source all that often. Often findings showed that those younger in age talk more about traffic accidents (*tau* = .12,

$p < .005$), as do those with more education (*tau* = .10, $p < .02$). Those that drive more also tend to talk more about traffic accidents (*tau* = .08, $p < .03$), as well as people who say they read the front page of the newspaper. However, individuals who relatively often read about accidents in the newspaper did not report talking significantly more frequently about them (*tau* = .03, $p < .25$).

II.15 CONCERN FOR ROAD SAFETY RELATED TO OTHER INTERVIEW RESPONSES

Two questions within the interview were combined in such a manner that the responses indicated a level of the respondents' concern for road safety. There were five levels of safety-mindedness, level 1 being a low level of concern and level 5 a high level of concern.

Concern was found to be significantly higher in women (*tau* = .15, $p < .001$), in older respondents (*tau* = .15, $p < .001$), and in individuals with low annual mileages (*tau* = .22, $p < .0001$).

Having been involved in (one or more) accidents and recency of accident experience were found to be associated with low levels of concern for safety (*tau* respectively .08 with $p < .05$ and .11 with $p < .01$). The degree of interest in reading about accidents shows some association; responses were categorized as:

(a) "spontaneous mention of reading about accidents,"

(b) "read accident report in the latest newspaper read, according to probe,"

(c) "occasional accident reading," and

(d) "never" following probe.

The resulting *tau* was .08 ($p < .05$), which is significant but very weak indeed.

It was found that the more safety-minded respondents have a stronger desire to know the location of the accident (*tau* = .08, $p < .05$) and the age of the accident-involved driver (*tau* = .10, $p < .02$). More concerned subjects did not report talking about accidents to other people more often (*tau* = .02, $p < .40$), but more often mentioned speeding as a major cause of accidents (*tau* = .13, $p < .003$).

In summary, it may be noted that 9 of the 38 comparisons between safety-mindedness and other interview variables were significant, which was clearly more than would be expected by chance (Wilkinson, 1951). However, these relationships were seen as being weak indeed and appeared to have minor implications only for the readership of accidents.

II.16 RESULTS OF OTHER CROSS-TABULATIONS

When the results of other cross-tabulations were considered, it was found that with respect to some sets of correlations, entire patterns of inter-relationships could be observed. For instance, the frequency of reading accident reports was found to be related to sex and age, women and older people showing more interest in the traffic accident reports. The frequency of reading accident reports was negatively related to educational level and socio-economic status. At the same time, however, sex was related to education and socio-economic level, women obtaining lower levels on these two variables, which were in turn strongly related in a positive sense.

From this data analysis there was no sure way of telling which of the variables (sex, age, education or socio-economic status) had a primary effect upon the reading of accident reports and which other ones just happened to be associated with the primary variable. All that was known was that women, older people and those of lower educational and socio-economic levels were somewhat more frequent readers of accident reports than men, younger people, and those of higher

education and socio-economic status.

Similarly, it was found that older people were more frequent readers of the newspaper. The same was true for drivers with higher annual mileages and who had personally been involved in accidents. Personal accident experience was more common in people driving high annual mileages, the likelihood of having been personally involved in an accident rising with increasing age.

II.17. Discussion of the Results of the Readership Analysis

The following general picture emerged from the telephone interviews with a sample of approximately 400 holders of driver's licences regarding their reading of accident reports in the daily newspaper.

About two-thirds of the respondents said they read the newspaper 5-6 times a week, about 60 per cent had read the day's paper prior to the interview which was held between 6:30 and 9:00 p.m. No more than 2 per cent saw the newspaper less than once or twice a week.

The frequency of newspaper reading, as related by the respondents, did not differ between men and women or those of varying socio-economic status and educational level, but reading frequency increased somewhat with age. It was also somewhat higher in individuals who accumulate larger annual mileages and who have been personally involved in traffic accidents.

The eight most commonly read content categories in the newspaper were found to be the front page, sports, headlines, politics, entertainment, advertisements, local news and editorials. Reading about traffic accidents was mentioned spontaneously by no more than five per cent of the individuals interviewed. Specific questioning, however, brought out that 29 per cent of all respondents had read an accident report in the paper either on the day of the interview or the day before. An additional 16 per cent mentioned having read about accidents within the last week preceding the date of the interview. Thus, approximately one-half of all interviewees reported having read about accidents within a one-week period. Only 9 per cent indicated they never read this type of material in the newspaper.

Various demographic variables were related to the frequency of reading about accidents. Higher frequency was found in women, in older individuals, and in people of lesser socio-economic or educational levels, but personal accident experience showed no significant association. A measure of concern for road safety or safety mindedness showed slightly

higher scores for individuals who often read about accidents, the difference being small but significant.

The frequency of reading various content categories in the newspaper, including traffic accidents, was also compared with the amount of space devoted to these categories in issues of local newspapers which appeared in the same time frame as the interviews were held. The calculations indicate that traffic accidents are about fourteen times more likely to be read than their space occupancy in the paper would justify. In this respect, accident reports are second only to the front page and they are followed by editorials.

The presence of a picture was shown to have a strong positive effect upon the likelihood that an accident report is read by the reader. In fact, the percentage of those who read accident reports among all respondents rose by a factor of about 3.5 if there was an accompanying picture. About two-thirds of the respondents saw merits to inclusion of accident pictures for two more or less distinct reasons: a general effect of drawing attention to the accident problem, and they may serve more particular educational purposes. There is, however, a strong hesitation with respect to photographs of "gory" scenes. Good taste is an important issue in the minds of the reading public.

There is a marked correspondence between what people recall from accident reports they read and the actual contents of these reports. However, there were some salient discrepancies between what readers would like to be informed about and what newspapers actually provide. This is especially true for information on accident causes and culpability. The most prominent information needs felt by the audience concern accident causation, the occurrence of injuries including fatalities, the location of the accident, the identities (names and other characteristics) of the individuals (drivers, victims) involved the sequence of the accident event, the damage to vehicles and the question of culpability (whose fault it is). Readers would also like to see more follow-up stories dealing with additional evidence regarding causes of accidents and further details of accident consequences. There is public awareness of the legal and technical con-

straints under which newspaper staff must do their work.

There are some differences in the relative strengths of interest in these particular information elements related to demographic characteristics such as age, sex and annual mileage driven, but presently unsatisfied information wants are felt equally strongly by people in different demographic strata. Individuals who read accidents more often also wish more information to be communicated.

In general, the findings may be interpreted to mean that drivers do experience a major need for information and education regarding traffic accidents and that they feel that this need can be fulfilled by daily newspapers. They see the educational role as twofold: increasing awareness of the likelihood of accidents, thereby enhancing driver caution, on the one hand, and on the other a specific educational function which informs readers how to avoid accidents similar to the ones reported by the newspaper.

That accident causes are primarily located within the driver is strongly believed by the audience. Drinking and driving, lack of attention, and speeding are seen as the major causes of accidents, while very few references were made to vehicular or environmental factors. Also, there seems to be no marked tendency to blame or scapegoat a particular demographic group for a large portion of accidents.

The interviews indicate that drivers do talk about accidents. Only 4 per cent said they never did, while more than one-third reported that they talked about accidents to other people within the last week prior to the interview. This is especially true for younger and better educated people and those who drive more, but was found unrelated to having been personally involved in an accident. Drivers also form theories about the causation of particular accidents in the absence of sufficient information.

The results of Part II indicated what reading material is likely to be read by large segments of the driving public. The integration of this knowledge into a modified accident reporting style was tested on its actual educational effect in the Part III of this three-phase research project.

Part III. Evaluation of the Effectiveness of a Modified Accident Reporting Style.

III.1 Introduction

The content analysis of existing reporting characteristics having been completed and after considerable insight into reader's reactions had been obtained, several desirable features of a modified reporting style could be specified. These included the following:

(a) a new reporting style should convey more information about the size of the accident problem in terms of accident rates and accident severity.

(b) it should be more informative with regard to the behaviours and conditions that lead to the occurrence of accidents.

(c) it should provide more information on the various kinds of consequences (health, insurance, grief, legal charges, etc.) of accidents for those involved and their relatives and friends (including the longer term aftermath).

(d) it should satisfy the need felt by readers for a greater awareness of the likelihood of accidents in general and specifically for knowledge as to how to avoid accidents similar to the ones reported by the newspaper or their severity.

(e) it should provide readers with general accident and accident prevention information as arising from traffic research and documentation accumulated by government departments, research institutes and safety organizations. By way of an example, mention may be made of the chances of having an accident as a function of alcohol consumption, the increased likelihood of surviving a crash when seat belts are in use, the contributory role of weather conditions and vehicle malfunction, and so forth.

(f) it should attract reader attention through article placement in conspicuous locations of the paper, the use of (non-horrific) photographs etc.

(g) it should take appropriate account of various existing constraints upon full disclosure of facts and assumptions regarding particular accidents in view of press time and especially the avoidance of printing prejudicial evidence and prevention of disturbing the goodwill between the press and police forces.

With these points in mind, an effort was made to approach the editor of a newspaper willing to implement an attempt towards educational accident journalism on an experimental basis and for a limited period of time. Before and after this period samples of newspaper readers were to be interviewed by telephone on their understanding of the size and nature of the accident problem. Moreover, for the purpose of external control, a comparison group residing in a different city were likewise interviewed before and after. The newspaper in the comparison community did not alter its accident reporting behaviour. Thus, an empirical evaluation of the effect of the modified reporting style could be conducted.

III.2 Procedure

Editors of the Whig-Standard, a daily newspaper (volume approx. 33,000 copies) published in the City of Kingston (approx. 60,000 inhabitants) in the Province of Ontario accepted the experimenters' request for cooperation. In conjunction with a staff writer of this paper, Mr. Ian Hamilton, a prototype of modified accident reporting was designed in light of the ideally desirable features as well as of the constraints imposed.

After considerable discussion, the following format was selected and implemented.

In the Saturday editions of the Whig-Standard, a weekly column appeared which contained an in-depth report on an accident (or accidents) which had happened earlier in the same week.

Accompanying this report, a specially boxed-in summary listing of all accidents were presented. This "box score" included all accidents which had happened in the preceding week within the City of Kingston (as recorded by the municipal police) as well as in the immediate surroundings (as recorded by the provincial police force). The summaries listed day of the week, time of day, accident location, damage (in dollars) and whether there were injuries or deaths. Their total number was mentioned in the explanatory text accompanying the listings, and so was the total number since the beginning of the year.

The in-depth report closely followed the suggestions through as mentioned in the previous section. The size of each article was approximately one-half page and it was printed in a prominent location of the paper. Information on accidents obtained from the police was complemented with interviews which the reporter conducted with eye-witnesses, car occupants, family members of deceased accident victims, etc. These interviews did not focus upon the issue of culpability but upon what may be called the "human context" of the accident. This included an account of the reason for the trip, the kind of company assembled in the car, whether seat belts were in use, the emotional shock produced by the accident, by the damage, the injuries and the fatalities, as well as the insurance implications that are often the sequel to traffic mishaps. Some attention was paid to courtroom proceedings dealing with earlier accidents. Inserted in the articles focussing upon particular accidents in Kingston and area were short descriptions of research findings and the behavioural recommendations that follow from these. The relevant

materials were procured from Transport Canada (Ottawa), the Ministry of Transportation and Communication (Toronto), the Canada Safety Council (Ottawa) and from publications in the documentation library of the authors. Four of the eight weekly (sets of) articles were accompanied by one or several photographs. The experimental period lasted from September 23 to November 11, 1978. Copies of all articles were published by Ackersviller and Wilde (1979).

Evaluation of the effects of the above communications on the general driving population focussed upon the following questions.

(1) How does the readership of the modified accident reports compare with the readership of the reports written in the current style? Does the modified reporting style influence the number of readers of accident reports?

(2) Does the modified style enhance public understanding of the size of the traffic safety problem?

(3) Does the modified style increase readers' appreciation of the accident risk associated with driving?

(4) Does the modified style enhance public awareness that accidents are due to human action and not to fate, pure chance or unpredictable mechanical failure?

(5) Does the modified style strengthen public awareness that accidents can be avoided and the severity of their consequences reduced by active intervention on the part of individual drivers?

The experimental design took the form of before/after comparisons of interview responses in the experimental city, Kingston, and the city chosen to serve as a control, Belleville (approx. 30,000 inhabitants; 100 km. west of Kingston) which was not exposed to the weekly column. In both cities interviews were conducted,

with a target sample of 300 interviews each per interview period, in the two week periods preceding and following the eight week appearance of the modified report (independent samples with external controls). The same structured questionnaire (not reproduced here) was administered to the respondents in the before and after samples.

III.3 Samples

In the "before" survey interviews by phone with randomly selected individuals who had a driver's license were conducted between September 4 and 15, 1978 on weekday evenings in both cities. In Kingston a total of 297 calls were completed and in Belleville 251 interviews were completed.

The "after" survey, occuring on weekday evenings between November 13 and 24, 1978 accrued 304 completed interviews in Kingston, in Belleville 301 interviews. Investigation of significance of the shifts in the Kingston newspaper readers was conducted by means of the Kolmogorov-Smirnov test for two independent samples, while the shift between the before and after samples in Belleville was viewed as the shift that would have occurred in Kingston, if the experimental treatment had not taken place. In other words, the shift observed in Belleville was considered as the shift under the null-hypothesis. The measure of shift, as calculated by means of the Kolmogorov-Smirnov method is tested by means of Chi-square with 2 degrees of freedom. The findings to be discussed below are limited to the ones that were considered most important for this summary report.

III.4 Attention Drawn by the Special Reports

To what extent were the special articles read and remembered by the newspaper readers? The respondents were asked if they could recall having read these reports with the following results: The fatal accident involving a high school student had 52.0 percent recall in Kingston and 36.2 percent in Belleville. The city judge who was hit at another intersection by another car which failed to

come to a stop had 21.6 percent recognition in Kingston and 11.3 percent in Belleville. The report about the four-year-old girl who walked out from behind a parked car and was hit by a half-ton truck had 57.3 percent recall in Kingston and 36.9 percent in Belleville. The article appearing at the beginning of the series about a woman losing her life because she was not wearing her seatbelt had less of a difference in recall -- 37.6 percent in Kingston and 31.7 percent in Belleville which may be reasonably expected as "forgetting" over the 8-10 week delay between appearance and the survey is likely.

False recognition of articles on the part of respondents is explicable on a number of counts. For example, confusion may exist in the minds of readers concerning how recent an article was, an interesting article, for example, may be remembered as being recent when in fact it may have appeared months earlier. "Interference" from other media such as radio and television may also confuse the respondent as to whether he or she had read about the accident in the newspaper or heard about it elsewhere. Social interaction also plays a part as having talked to a neighbour or co-worker may have also contributed to false recognition. The effect of false recognition was demonstrated by respondents' recall of an accident that had not occured, that is, a four-car collision on Highway 2 by 23.7 percent of respondents in Kingston and 27.0 percent in Belleville.

However, when examining the differences in recall of box score listings the least interference is to be expected. This is because this type of reporting of accidents was created specifically for the experimental period, providing in a list all city and OPP accidents, the day of the week it occured, the time it was reported, location and monetary damage and would be unfamiliar except to those who had actually read the articles. In Kingston recognition was 46.8 percent and in Belleville 6.5 percent. Therefore, even with the difficulties of false recognition under consideration, recall was greater in Kingston and indications were of a fairly high level of readership.

It may be concluded from the above results that a little over 40 percent of the readership recalled having seen one or more of the articles.

III.5 Effects on Readership

The appearance of the modified accident reports did not significantly affect the recency of the last newspaper read nor the recency of respondents having read an accident report. However, when respondents' judgement of degree of considered importance about certain content items within individual accident reports was examined, some changes were noted. Respondents were queried as to whether they thought the content item (information) was very important, important, unimportant or of no importance at all. Kingston readers found a step-by-step description of what happened to be more important after the implementation of the modified style (Chi-square = 7.27, df = 2, $p < .05$). This has been seen as noteworthy whereas causes may not be printed until after a court's ruling, a step-by-step account of how the accident occured may in fact be a basis for inferences on causes. The findings of Part II of this study indicated that readers "expand" on facts within the report as to why the accident happened. There was also a significant relative shift towards unimportant for the content item "age of driver" in Kingston "after" (chi-square = 10.16, df = 2, $p < .01$)

If was found that Kingston respondents "after" became relatively more of the opinion that accident reports are poorly written up (chi-square = 19.47, df = 2, $p < .001$). Kingston readers also expressed relatively more aggreement "after" that accident reports help you avoid similar accidents yourself (chi-square = 29.08, df = 2, $p < .001$). These two significant shifts were considerable in size. The shift towards agreement with the statement that accident reports are poorly written up amounted to 18 percent. There was a 22 percent shift towards agreement that accident reports may be helpful to the reader in accident avoidance.

III.6 Effects upon Perceived Size of the Traffic Accident Problem

Does the modified style enhance public understanding of the size of the traffic safety problem? In specific terms would the increase in available information through the modified accident reporting style create more realistic estimates concerning the sheer numbers involved? No change was found in respondents' estimation of annual Canadian fatalities. However, there is a considerable and significant increase in the estimate of the weekly number of accidents occuring within the city limits following the eight-week experimental period in Kingston ($p < .001$). Similar findings hold for the estimates of accident numbers in both city and country ($p < .0001$). Here again, a major and significant shift is observed, indicating that estimates made by Kingston residents were higher after the modification in accident reporting.

It may also be noted that an approximate average of 87 percent of the respondents in both cities gave incorrect estimates of annual Canadian fatalities (Canadian annual fatalities fall within the 5,000 - 6,999 range). As many as 62 percent gave estimates lower than 5,000 deaths per year. This would indicate a considerable need for information on the part of the reader.

Respondents were also asked for their judgement on whether traffic accidents produced the greater amount of human suffering as compared to other societal problems. It was found that Kingston readers became more concerned about traffic accidents "after" as compared to pollution (chi-square = 10.16, df = 2, $p < .01$), heart disease (chi-square = 8.65, df = 2, $p < .02$) and especially as compared to inflation (chi-square = 21.69, df = 2, $p < .001$). When responses were summed across all social problems other than accidents Kingston respondents judged traffic accidents as more serious "after" (chi-square = 17.37, df = 2, $p < .001$).

III.7 Effects upon Perception of Accident Risk

Does the modified style increase readers appreciation of the accident risk associated with driving? Kingston readers became relatively more of the

opinion that driving is unsafe "after" (chi-square = 7.27, df = 2, $p < .05$). It was also shown that the experimental series of accident reports was followed by an increase in the belief that other drivers have a greater accident likelihood than the respondent himself or herself (chi-square = 7.27, $p < .05$). Although respondents' safety-mindedness, determined by speed-preferance and irritation with either slow or fast drivers was not significantly changed "after", it was found that in Kingston there was more agreement "after" that accident reports increase the awareness of accidents occuring to them and less agreement in Belleville "after" (chi-square = 13.52, df = 2, $p < .01$).

III.8 Effects upon the Attribution of Causes

Does the modified style enhance public awareness that accidents are due to human action and not to fate, pure chance or unpredictable mechanical failure? Relative to Belleville, there was a significant decrease in the number of respondents in the Kingston "after" condition who believe that many accidents could be avoided "if drivers really tried" (chi-square = 24.04, $p < .001$). Although there was no change in the number of respondents willing to give a numerical estimate of the percentage of accidents due to mechanical failure, those who did give an estimate gave a greater importance to this cause in Kingston "after" (chi-square = 8.35, $p < .02$).

There were no significant changes in the number of respondents giving a numerical estimate of the role of bad weather and road conditions in accident causation nor in the percentage estimates of the importance of this factor given by the respondents. Although there was no significant shift in the percentage of respondents willing to make a numerical estimate of the role of pure chance, bad luck or fate, quantitative estimates of the importance of this factor in accident causation rose significantly in Kingston "after" ($p < .001$).

No significant changes were found concerning respondents' estimates of the contribution to accidents by factors such as drinking and driving, speeding and the taking of deliberate risks. Following the eight-week accident series the estimate of the role of inattention ($p < .05$) and of lack of driving skill ($p < .02$) dropped significantly among Kingston respondents. No shift was observed in the estimates of the role of drivers under the age of 25 play in the causation of accidents.

In general there was a significant drop in the importance respondents attached to human error causes of accidents and an increase in the alternative classification (like weather, mechanical failure of vehicle and bad luck). This lack of overall effect upon attribution of accident causes was counter to the authors' intentions and expectations and may be perhaps understood when the constraints upon the modified reporting style are considered. Causes of an accident are not available for print in the space of the week because of legal and time considerations. The newspaper had an obligation to point out that even when reporting charges these still had to have a fair hearing. Explicit mentioning of causation facts was primarily based upon general items of established relationships between particular behaviours and accident likelihood, and not with inference to the specific accidents described in the reports.

III.9 Effects upon Perceived Avoidability of Accidents

Would the modified reporting style strengthen the reader's awareness that accidents can be avoided and the severity of their consequences reduced by active intervention on the part of the individual? There were no significant changes in agreement or disagreement by respondents with the statement that reading about accidents had encouraged them to wear their seatbelt. A significant shift was observed concerning respondents estimation on whether almost all, more than half, about half, less than half or almost none of the accidents that occur could be

avoided if drivers really tried, indicating a larger contingent of respondents expressing that few accidents could be avoided if drivers tried "after" ($p < .001$). This shift was due to Belleville respondents being more of the opinion that accidents can be avoided through driver action "after" ($p < .02$). The change in Kingstons per se although negative, is not significant.

It would thus seem fair to infer from these findings that the modified accident reports failed to install stronger belief in the avoidability of accidents through appropriate driver action.

III.10 Discussion of Experimental Effects

When the effects of an eight-week period of the publication of modified accident reports were examined, the following results emerged. It is likely that at least approximately 40 percent of the sample of licensed drivers saw one or more of the eight special articles which appeared weekly. This is a conservative estimate, because it is based on claimed recall corrected for false recognition, without considering the amount of forgetting that may have occurred in the eight-week period. It may, therefore, be concluded that the special articles attracted a good deal of attention among newspaper readers who are also drivers of automobiles.

Several opinions about accident reporting seem to have been affected by the modified style. Readers became more of the opinion that accident reports should contain a step-by-step account of how the accident happened. They developed a stronger feeling that accident reports can "help you avoid similar accidents yourself", but that they are "poorly written up." This would appear to indicate that the audience became at the same time more critical of the traditional (or routine) manner in which accidents are described in the newspapers, and more aware of the useful, educational potential of accident publicity.

There was no change in respondents' estimates of Canada-wide annual fatality rates. The numerical estimates given are considerably lower than the actual

numbers of people killed and these estimates were not corrected by the series of eight specially featured articles on accidents. On the other hand, there were significant increases in the estimates of the weekly numbers of accidents investigated by police forces operating in the city and surrounding county. There was a rise in this respect in the experimental area (Kingston) and a drop in the control community (Belleville).

Subjective ratings of the seriousness of the traffic accident problem also underwent significant changes. The Kingston audience became more of the opinion that the road accident problem is serious in terms of the amount of human suffering as compared to the problem of pollution. When the "before" and "after" conditions are compared, the same is found for the feelings about road accidents as a problem relative to inflation and heart disease. When viewed against alcoholism or cancer, there was no change, but an overall score indicating the tendency to rate the road accident problem as more serious than the comparison problems rose significantly in the experimental community.

Following the special article series, Kingston respondents indicated a comparatively stronger feeling that driving is unsafe. There was a larger number of responses in the categories "unsafe" in reaction to the question "In general, how safe do you consider it is to drive an automobile?" On the other hand, the percentage estimate of the chances of having an accident oneself in a given year did not rise. What did rise was the tendency to attribute greater accident risk to drivers in general than to onself. The same holds for the increase in agreement with the statement that "accident reports increase people's awareness of the possibility of accidents occurring to them."

Thus, there is some reason to believe that the modified accident reporting style has had a greater effect upon the individual's estimate of the likelihood of accidents in general than upon his or her own personal perceived accident risk.

The consequences of the special articles seem to have been greater for people's perceptions of other people than of themselves. A defensive type of reasoning which makes a sharp distinction between oneself and "the other guy" may perhaps also be detected in the results where only 24 percent of the individuals rate their own chance of having an accident as higher when compared to other Ontario drivers, while as many of 56 percent see them as lower. Logically, these two percentages ought to have been the same. One is, likewise, reminded of the frequently made observation that drivers on average view themselves as a better driver than the average driver.

We arrive, therefore, at the interpretation that the publicity effort of the Whig-Standard has had a considerable effect upon people's concepts and feelings about road safety, but has achieved little penetration into people's thinking about themselves as drivers. It appears that the implications for one's own life (and driver behaviour) have not been drawn.

The effects of the special articles upon respondents' concepts of accident causes were likewise not optimal. The data seem to indicate that the readers have not been persuaded of the man-made, unaccidental nature of accidents. Following the eight-week period there were in the experimental community significant increases in the role attributed to mechanical failure, pure chance, bad luck and fate. Similarly, there was a drop in the opinion that accidents can be avoided if drivers really try and that they may be caused by lack of attention or driving skill.

The available data do not offer a clear indication as to why a decrease in the opinion that accidents can be avoided through active human intervention may have occurred. It might, however, be speculated that the concepts "his own fault" and "bad luck" are not diametrically opposed in peoples' minds. People may reason that "he should have buckled his seatbelt, but it is still bad luck

that he collided with a tree and was killed in the accident". Especially as dangerous behaviour such as driving after drinking, speeding or not wearing a seatbelt is followed by an accident only in a small minority of cases. The human mind may well remain prone to blame bad luck for the mishap. The emphasis upon human interest materials in the special articles, the dramatization of the sequences of events, and their consequences, may possibly have emphasized the unexpected, inadvertent and pitiful nature of the accidents. As accident causes could only be mentioned in a general manner and were not specifically and cogently linked to the accidents in question, the "bad luck" aspect may have been more salient in the readers' minds than notions of responsibility and culpability. We may be inclined to view an accident-involved driver as unlucky until we are given clear and unescapable evidence that he only had himself to blame. If this reasoning is correct, a much greater effort than attempted hitherto will be necessary to eradicate people's beliefs in pure chance, bad luck and fate. The challenge of developing the potential that exists in a modified reporting style is in creatively overcoming the constraints that limit a full discussion of the causes of the accident reported.

We will finally turn to some practical issues. For newspapers considering the possibility of modifying their present reporting style to one that would enhance general safety awareness, the following recommendations and observations can be made. The nature of the problem of traffic accidents is that they happen on such a common and daily basis that in fact they are mostly ignored. Only the rare and spectacular accidents tend to be publicized, while the toll of fatalities and injuries steadily, daily and supposedly monotonously rises upwards. Does this avoidance of this common place problem, except in perfunctory write-ups, make sense?

In Phase II of the present study it was found that traffic accident reports are about fourteen times more likely to be read than their space occupancy in the paper would justify. In terms of readership, traffic accidents came second only to the front page and were followed by editorials. Thus it may be seen that there already exists a great deal of interest on the part of the readers. It is logical to send reporters to cover a story involving disaster involving many fatalities. Traffic accidents result in the death of over 5,000 Canadians each year, that is 5,000 families affected, not mentioning the personal injury accidents whose victims suffer grave physical and financial consequences. It is a dramatic problem because it deals with one of the most serious consequences of human behaviour, that is, driver behaviour resulting in death. It is logical to cover "a story" which has become such a part of Canadian society that most people underestimate its seriousness. The potential lies in not only documenting traffic accidents' effects on our lives, but in creating general awareness of the risks involved in driving, and hopefully creating through this behaviour that is more safety-oriented.

The key to a successful modified reporting style is in the cooperation with police. The newspaper must not only respect the limitations of reporting pre-judicial evidence, but the responsibilities of the police in general. By discussing the motivations for reporting, i.e., not to lay blame but to stress the human context of accidents and to create a safety platform, an understanding may then be developed on which cooperation may be based. As one of the aspects of police work is the enhancement of traffic safety, an offshoot of this working relationship may be even generally improved relations between the newspaper and the police.

The purpose of the modified report has been said to be the "process of humanizing statistics." From Phase II of the present study the following information was regarded as important content items: nature of the injuries and

fatalities, location of the accident, names of the individuals involved, damages, a step-by-step description of what happened and whose fault it was. From the present study it should be mentioned that although readers may generally wish to know fault (who or what caused the accident), this does not lie within the power of the newspaper. The increased importance attached to a step-by-step description (after the appearance of the modified reports) may provide a "solution" by providing the information needed to infer what might have caused the accident. However, beyond these informational facts is the need for placing the traffic accident event within a human context. The fact of the accident occurring to someone who like any other person of the community was going about the normal routine of life may be stressed, the consequences of the accident being shown as more than a statistical footnote.

Tasteful reporting was seen as an important issue in the opinion of the readers in Phase II of the present study. It is also important when seeking cooperation from members of the community in writing a story. By establishing in the very first reports a precedent of sympathetic reporting which does not seek to lay fault or be in bad taste (sensational) creates an environment of cooperation. This was true in that there was little difficulty in "getting" the story as any reluctance on the part of individuals involved in the accident had been eased by the example of previous reports.

There is a wealth of information available about traffic safety problems from such sources as Transport Canada, Ottawa; provincial ministries of transportation; the Canada Safety Council; the various safety publications available through libraries, the insurance companies and the expertise of police and other local authorities (court judges, crown officials, etc.). By relating this information to a specific accident, the range of available topics is wide: for example, seatbelts, drinking and driving, winter driving, speeding, insurance costs, and so on.

The information given in this three-part study, might help a journalist in developing creative and imaginative efforts toward a more educational manner of accident reporting. The story potential should not be underestimated just because traffic accidents are common, facts prove otherwise. It is quite simple -- there are plenty of accidents, reader interest and informative stories out there.

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